



# Offer and Acceptance

State of Arizona  
State Procurement Office  
100 N. 15<sup>th</sup> Ave. Suite 201  
Phoenix, AZ 85007

SOLICITATION NO.: ADSP016-00005912 Request  
for Qualifications: 2016 Annual Professional  
Services List

PAGE  
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Offeror: Applied Pavement Technology, Inc

OF  
1

## OFFER

### TO THE STATE OF ARIZONA:

The Undersigned hereby offers and agrees to furnish the material, service or construction in compliance with all terms, conditions, specifications and amendments in the Solicitation and any written exceptions in the offer. Signature also certifies Small Business status.

Applied Pavement Technology, Inc.

Company Name

115 W. Main Street, Suite 400

Address

Urbana

IL

61801

City

State

Zip

prequal@appliedpavement.com

Contact Email Address

Signature of Person Authorized to Sign Offer

Kathryn A. Zimmerman

Printed Name

President

Title

Phone: 217-398-3977

Fax: 217-398-4027

By signature in the Offer section above, the Offeror certifies:

1. The submission of the Offer did not involve collusion or other anticompetitive practices.
2. The Offeror shall not discriminate against any employee or applicant for employment in violation of Federal Executive Order 11246, State Executive Order 2009-9 or A.R.S. §§ 41-1461 through 1465.
3. The Offeror has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the submitted offer. Failure to provide a valid signature affirming the stipulations required by this clause shall result in rejection of the offer. Signing the offer with a false statement shall void the offer, any resulting contract and may be subject to legal remedies provided by law.
4. The Offeror certifies that the above referenced organization  IS/  IS NOT a small business with less than 100 employees or has gross revenues of \$4 million or less.

## ACCEPTANCE OF OFFER

The Offer is hereby accepted.

The Contractor is now bound to sell the materials or services listed by the attached contract and based upon the solicitation, including all terms, conditions, specifications, amendments, etc., and the Contractor's Offer as accepted by the State.

This Contract shall henceforth be referred to as Contract No. ADSP016-00005912

The effective date of the Contract is March 1, 2016

The Contractor is cautioned not to commence any billable work or to provide any material or service under this contract until Contractor receives purchase order, contract release document or written notice to proceed.

State of Arizona  
Awarded this

29

day of

February

2016

Procurement Officer



ATTACHMENT I – General Qualifications  
ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:  
ADSP016-00005912

STATE PROCUREMENT OFFICE  
Department of Administration  
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(If a firm has branch offices, complete for each specific branch office seeking work.)

1. Annual Request for Qualifications

a. FIRM (OR BRANCH OFFICE ) NAME:	Applied Pavement Technology, Inc.
b. FIRM (OR BRANCH OFFICE) STREET:	115 W. Main Street, Suite 400
c. FIRM (OR BRANCH OFFICE) CITY:	Urbana
d. FIRM (OR BRANCH OFFICE) STATE:	Illinois
e. FIRM (OR BRANCH OFFICE) ZIP CODE:	61801
f. YEAR ESTABLISHED:	1994
(g1). OWNERSHIP - TYPE:	Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	AZ UTRACS SBC
h. POINT OF CONTACT NAME AND TITLE:	Casey Brooks, Business Development Coordinator
i. POINT OF CONTACT TELEPHONE NUMBER:	217-398-3977
j. POINT OF CONTACT E-MAIL ADDRESS:	<a href="mailto:prequal@appliedpavement.com">prequal@appliedpavement.com</a>
k. NAME OF FIRM (If block 1a is a branch office):	







**ATTACHMENT I – General Qualifications**

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Phoenix, Arizona 85007**

**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Margaret R. Covalt, P.E.</b>	b. ROLE IN THIS CONTRACT Principal-In-Charge / Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL <b>31</b>	2. WITH CURRENT FIRM <b>19</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> <b>M.S., Civil Engineering, University of Illinois, 1986</b>	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer AZ, CO, CT, GA, IL, KS, KY, MA, MN, NJ, NM, PA, SC, VA, WA
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author of ASCE's The Arizona Airport Pavement Management System: History and Innovation; Member American Society of Civil Engineers (ASCE); Member Transportation Research Board (TRB); Member Airport Consultants Council (ACC); Member National Society of Professional Engineers (NSPE); Member ASTM

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Arizona Statewide Airport Pavement Management System (APMS) Update (Statewide, AZ)	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Oversaw all aspects of this project, which involved sixty-three airports and included collecting inventory and condition data, preparing maps, developing an 8-year maintenance and rehabilitation (M&R) plan, generating reports, developing an APMS procedures manual, and updating an Interactive Data Exchange Application (IDEA). This project also involved testing with a falling weight deflectometer (FWD) to determine allowable loads and Pavement Classification Numbers (PCNs). Also served as the Project Manager for the 1999 implementation and the 2002, 2006, and 2010 updates. \$1,264,944.		
2.	Phoenix Sky Harbor International APMS Update (Phoenix, AZ)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal-In-Charge for this Airfield and Testing project. Oversaw this project, which included reviewing records, updating maps, conducting Pavement Condition Index (PCI) inspections, updating and customizing the PAVER™ database, developing M&R recommendations, preparing a project report, and creating a geographic information system (GIS) link within PAVER™. In addition, it included calculating PCNs and developing an IDEA. \$260,394.		
3.	New Mexico Statewide APMS Update (Statewide, New Mexico)	2017 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Overseeing all aspects of this project which involves forty-eight airports and includes collecting inventory data, conducting PCI inspections, updating the PAVER™ database, analyzing data, calculating PCNs for the airport runways, developing a multi-year M&R plan, composing reports, developing a web-based IDEA, and conducting training on the use of the PAVER™ software. It also includes a performing a structural analysis of the runway pavements using a heavy-weight FWD and calculating runway PCNs. \$1,216,674.		
4.	Colorado Statewide APMS Update	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. This multi-year project involved pavement management at sixty-three airports. It included conducting PCI surveys, preparing maps, updating the PAVER™ database, performing data analysis, preparing M&R programs, creating a map link to PAVER™, updating the IDEA, and developing reports. During 2012, this project also included a specialized study on materials-related distress (MRD) in Colorado. Also served as the Project Manager for all previous updates dating back to 1996. \$678,038.		
5.	Tucson Airport Authority APMS Update (Tucson, AZ)	2013	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal-In-Charge for this Airfield and Testing Project. This project included records review, map updates, PCI inspections, PAVER™ update and customization, development of M&R recommendations, preparation of a project report, and creation of a GIS link within PAVER™. In addition, it included the determination of PCNs for the airside pavements and training on the use of PAVER™. \$156,983.		



**ATTACHMENT I – General Qualifications**

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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Kathryn A. Zimmerman, P.E.</b>	b. ROLE IN THIS CONTRACT Principal-In-Charge / Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL <b>31</b>	2. WITH CURRENT FIRM <b>20</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> <b>M.S., Civil Engineering, University of Illinois, 1985</b>	f. PROFESSIONAL TRAINING - REGISTRATIONS <small>Professional Engineer: AZ, AL, AR, CO, CT, FL, HI, ID, IL, IN, IA, KS, KY, LA, MD, MI, MS, MO, MT, NE, NV, NJ, NM, NY, NC, OH, OR, SC, SD, TN, TX, UT, WA, WV, WI, WY</small>
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author of ICMPA's "Pavement Management's Role in an Asset Management World," Co-Author of FHWA's "Practical Guide for Quality Management of Pavement Condition Data," Member TRB, Member ASCE, Recipient of the National Highway Institute (NHI) Instructor of Excellence Award, Recipient of TRB Blue Ribbon Award

**H. RELEVANT PROJECTS**

1.	(1) TITLE AND LOCATION <i>(City and State)</i> <b>Nevada DOT Transportation Asset Management Plan (TAMP) Development (Statewide, NV)</b>	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Value Analysis and Highway project. Directing the development of a TAMP that includes pavements, bridges, and ancillary assets. Facilitating project meetings and technical work group activities to obtain the information needed to complete the TAMP. \$383,728.</b>	Professional Services <b>2016 (in progress)</b>
		<input checked="" type="checkbox"/> Check if project performed with current firm
2.	(1) TITLE AND LOCATION <i>(City and State)</i> <b>Ohio DOT TAMP Development (Statewide, OH)</b>	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Value Analysis, Life Cycle Costing, and Highway project. Developing a TAMP for pavements, bridges, and culverts that leads to changes in the agency's existing processes to reduce life cycle costs and preserve system conditions under constrained funding projections. The development of the TAMP includes a life cycle assessment of current pavement and bridge management strategies, a risk management assessment, and facilitating meetings with Technical Work Groups. \$399,813.</b>	Professional Services <b>2015 (in progress)</b>
		<input checked="" type="checkbox"/> Check if project performed with current firm
3.	(1) TITLE AND LOCATION <i>(City and State)</i> <b>Town of Cave Creek Pavement Management System Implementation (Cave Creek, AZ)</b>	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Principal-In-Charge for this Streets project. Oversaw all aspects of the project which included performing network definition, developing a database, conducting a condition inspection, and developing a multi-year M&amp;R program. \$70,810.</b>	Professional Services <b>2014</b>
		<input checked="" type="checkbox"/> Check if project performed with current firm
4.	(1) TITLE AND LOCATION <i>(City and State)</i> <b>FHWA Transportation Performance Management IDIQ (Nationwide)</b>	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manger for this Indefinite Delivery Indefinite Quantity (IDIQ) Transportation Research Project. Overseeing the day-to-day management of research task orders related to the establishment of performance-based transportation management at the Federal level. Task Orders include Technical Support, Support for the Bridge Condition Performance Measure, and Support for the Pavement Condition Performance Measure. \$620,176.</b>	Professional Services <b>2017 (in progress)</b>
		<input checked="" type="checkbox"/> Check if project performed with current firm
5.	(1) TITLE AND LOCATION <i>(City and State)</i> <b>Transportation Asset Management (TAM) Gap Analysis Tool (Nationwide)</b>	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Principal Investigator for this Transportation Research Project. Analyzed the need for revisions to the Gap Analysis Tool included in the AASHTO Transportation Asset Management Guide – A Focus on Implementation and developed a spreadsheet tool that met those requirements. Developed a gap analysis tool that was user-friendly and applicable for transportation practitioners and decision makers in the United States. \$148,560.</b>	Professional Services <b>2014</b>
		<input checked="" type="checkbox"/> Check if project performed with current firm



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Monty J. Wade, P.E.</b>	b. ROLE IN THIS CONTRACT Principal-In-Charge/Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL <b>22</b>	2. WITH CURRENT FIRM <b>18</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> <b>M.S., Civil Engineering, University of Illinois, 1993</b>	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer, AZ, FL, IL, IA, MI, MO, OH, TN; Canadian Provinces AB, MB, NL, NS, ON, SK
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author ICMPA's "The Use of GPS-Based Distress Mapping to Improve Pavement Management;" Member, ACC; Member, ASCE,

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<b>Arizona Statewide APMS Update (Statewide, AZ)</b>	<b>2015</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Senior Engineer for this Airfield and Testing project. Provided Quality Assurance/Quality Control (QA/QC) support for the FWD analysis and PCN calculation portions of the project. \$1,264,944.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	<b>Phoenix Sky Harbor International Airport Airside Pavement Assessment (Phoenix, AZ)</b>	<b>2014</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield and Testing project. Oversaw all aspects of the project, which included conducting PCI inspections, performing FWD testing, updating the PAVER™ database, performing a condition evaluation for airside service roads, developing M&amp;R recommendations, calculating PCNs, and assisting with developing a web-based IDEA. \$260,394.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	<b>Houston Airport System Asset Condition Assessments (Houston, TX)</b>	<b>2014</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield and Testing project. Oversaw all aspects of the project which included conducting PCI inspections and updating the APMS for the runways and taxiways, conducting FWD testing, analyzing data, converting the existing AIRPAV™ database to PAVER™, determining PCNs, and developing M&amp;R recommendations. Nearly 42 million square feet of pavement were inspected. Also provided training on the business process for maintaining the APMS and proper M&amp;R techniques. \$423,338.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	<b>Tucson Airport Authority APMS Update (Tucson, AZ)</b>	<b>2013</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield and Testing Project. Oversaw all aspects of the project, which included a records review, map updates, PCI inspections, PAVER™ database update and customization, determination of PCNs, development of M&amp;R recommendations, preparation of a project report, and training. \$156,983.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	<b>Phoenix Deer Valley Airport PCN Analysis (Phoenix, AZ)</b>	<b>2014</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield Project. Performed a records review, calculated PCNs, performed a geotechnical investigation, and developed a pavement strength report. \$29,803.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Kyle M. Potvin, P.E.</b>	b. ROLE IN THIS CONTRACT Project Manager/Senior Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 21	2. WITH CURRENT FIRM 14

d. LOCATION *(City and State)* Applied Pavement Technology, Inc. (Waunakee, WI)

e. EDUCATION *(DEGREE AND SPECIALIZATION)*  
B.S., Land Surveying, Michigan Technological University, 1997  
A.S., Civil Engineering, Michigan Technological University, 1996

f. PROFESSIONAL TRAINING - REGISTRATIONS  
Professional Engineer LA, MI, NV, ND, WI

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*

**Member, ASTM; Member, ASCE; Member, Experimental Aircraft Association**

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Arizona Statewide APMS Update (Statewide, AZ)	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Senior Engineer for this Airfield and Testing project. Oversaw all fieldwork. Conducted PCI inspections, oversaw mapping, updated the inventory and network definition, developed and customized the database, and analyzed data. Assisted with developing an IDEA and project reports. Also served as a Project Engineer for the 2002, 2006, and 2010 updates. \$1,264,944.		
2.	Michigan Statewide APMS Update (Statewide, MI)	2016 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Managing day-to-day aspects of the project including conducting PCI inspections, developing and customizing the PAVER™ database, analyzing data, assisting with developing a web-based IDEA, and preparing reports. Also served as the Project Manager for the 2005 to 2008 update and 2009 to 2013 update. \$669,810.		
3.	Wisconsin Statewide APMS Update (Statewide, WI)	2016 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Managing the day-to-day aspects of the project, including updating and customizing the APMS database, conducting PCI inspections, calculating PCNs, analyzing the APMS, developing a 5-year CIP, and preparing project reports. Also served as the Project Manager for the 2012 update and the 2009 to 2011 update. \$1,253,268.		
4.	Hawaii Statewide APMS Update (Statewide, HI)	2016 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Lead Engineer for this Airfield and Testing project. Responsible for coordinating, planning, and conducting all fieldwork including PCI inspections and structural evaluation using an FWD. Also responsible for collecting historic construction records, updating the PAVER™ database, and preparing project reports. Also served as a Project Engineer for the 2005 update. \$1,417,508.		
5.	Houston Airport System Asset Condition Assessments (Houston, TX)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Senior Engineer for this Airfield and Testing project. Converted existing APMS data from the previously used AIRPAV™ software to PAVER™. \$423,338.		



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Stephen B. Seeds, P.E.</b>	b. ROLE IN THIS CONTRACT Project Manager/Senior Engineer	c. YEARS EXPERIENCE	
		1. TOTAL <b>37</b>	2. WITH CURRENT FIRM <b>15</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Reno, NV)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S., Engineering, University of Texas at Austin, 1980	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer Nevada and California
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Member, TRB; Member, California Pavement Preservation Task Group; Member, International Association for Asphalt Pavements; Member, ASCE; Member, Community Associations Institute; Recipient of the NHI Instructor of Excellence Award

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Pavement M&R for Jefferson County Parking Lots (Jefferson County, CO)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Parking Lot and Testing project. Oversaw all aspects of the project which included conducting a visual inspection, reviewing data, performing PCI surveys, coordinating and analyzing coring and boring samples, developing a parking lot database, developing M&R recommendations, and preparing a report. Also developed materials and construction requirements and prepared a request for bids. \$41,200.		
2.	Pavement Engineering and Management Support for Arrow Creek Homeowners Association (Reno, NV)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Streets project. Overseeing all aspects of the project, which includes conducting pavement condition surveys, providing construction oversight, preparing bid packages, and developing annual M&R programs, as well as long-term pavement management plans used in developing the reserve study. Annual project since 2004. Served as Technical Advisor and Expert Witness in 2008 Pavement Forensics project. \$35,959 (most recent project).		
3.	Douglas County Forensic Pavement Analysis (Douglas County, CO)	2013	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Streets, Testing, and Forensic Engineering project. Oversaw all aspects of the project including a records review, pavement condition surveys, materials testing, and developing recommendations for pavement rehabilitation. Also served as Technical Advisor and Expert Witness in litigation over premature failure of pavement. \$84,607.		
4.	Pavement Engineering and Management Support for Lake Glenn Manor Homeowners Association (Carson City, NV)	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Streets project. Evaluated the existing pavement network and projected the type and timing of the next major rehabilitation treatment. Developed a long-term (30-year) M&R plan that can be used by the association's reserve specialist to develop the Homeowners Association's next reserve study. Prepared a request for bids, and provided quality assurance support during construction. Also served as the Project Manager for the 2011 project. \$6,610.		
5.	Arizona Department of Transportation Evaluation of Maintenance Strategies (Statewide, AZ)	2012	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Transportation Research Study. Evaluated field performance data from wearing course and preventive maintenance experimental treatment projects to determine which provided the best performance in terms of weathering, flushing, skid resistance, thermal cracking, and fatigue cracking and to identify recommend those that were most effective. \$115,000.		



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Mark P. Gardner, P.E.</b>	b. ROLE IN THIS CONTRACT Project Manager/Senior Engineer	c. YEARS EXPERIENCE	
		1. TOTAL <b>32</b>	2. WITH CURRENT FIRM <b>4</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S., Civil Engineering, Texas A&M University, 1982	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer Texas
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author, FHWA's "Procedures for Defining Management Strategies and Targets Associated with Transportation Goals," Member, TRB; Member, TRB Committee AFD60 Flexible Pavement Design; Member, ASCE; Recipient, NHI Instructor of Excellence Award

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Town of Cave Creek Pavement Management System (Cave Creek, AZ)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets and Testing project. Oversaw all aspects of the project which included performing network definition, developing a PAVER™ database, conducting PCI inspections, and developing a multi-year M&R program. \$70,810.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	City of Goodyear Pavement Management System (Goodyear, AZ)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets and Testing project. Evaluated the pavement management system, recommended improvements in processes, evaluated City experience with selected treatments, and recommended greater use or specific preservation approaches. Supported the Public Works Director in presentation of findings to City Council, highlighting current conditions and budget needs to meet performance goals. \$61,514.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	City of Peoria Street Asset Inventory and Pavement Management System Update (Peoria, IL)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets and Testing project. Oversaw all aspects of the project which included creating an asset inventory for street signs and lights, completing automated surveys for 1,000 lane-miles of city streets and 100 miles of alleys, conducting PCI surveys, analyzing data, updating the PAVER™ database, improving the City GIS showing roadway assets, and supporting the Public Works Director in a presenting network conditions and budget scenarios to City Council for use in budget planning discussions. \$488,743.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	Line 6B Haul Road Evaluation (Michigan and Indiana)	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets, Highways, Testing, and Inspection project. Oversaw the evaluation of the impact of heavy equipment on approximately 2,700 miles of roadway through collection and analysis of pre- and post-construction condition data. \$468,450.	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	Review of Engineering Consultants International (PVT) LTD's Designs for Abu Dhabi Port Roads. (Abu Dhabi, United Arab Emirates)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Design Reeviw project. Provided a peer review and opinions for design plans for Abu Dhabi Port Roads. \$9,769.	<input checked="" type="checkbox"/> Check if project performed with current firm	



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
<b>Arizona Statewide APMS Update (Statewide, AZ)</b>	<b>2015</b>	<b>N/A</b>

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
<b>ADOT Aeronautics Group</b>	<b>\$1,310,318</b>	<b>\$1,264,944</b>

**f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT** *(include scope, size, and length of project)*

In 2000, Applied Pavement Technology, Inc. (APTech) established the Arizona airport pavement management system (APMS) for the Arizona Department of Transportation (ADOT) Aeronautics Group to provide them with a tool to proactively manage the pavement infrastructure at fifty-three Arizona airports (the system now includes sixty-six airports).

The initial study, performed in 2000, indicated that state-funding levels were insufficient to sponsor all necessary pavement maintenance and rehabilitation (M&R) projects. Based on the results of the pavement management study conducted by APTech, the Aeronautics Group initiated the Airport Pavement Preservation Program (APPP). The APPP allows the state to make the best use of its limited budget by funding those work types that have historically proven to provide the most benefit per dollar expended. Because it is a state-level program, the Aeronautics Group can provide airports with funding for crack sealing, slurry seals, thin overlays, and concrete restoration. This is especially important for smaller facilities or those located in sparsely-populated areas, which could not otherwise afford extensive maintenance efforts.

Due to ADOT's satisfaction with APTech's work, the Aeronautics Group retained APTech to update its APMS again in 2003, 2006, 2010, and 2013. During these projects, APTech updated the systems inventory and maps, and conducted pavement inspections using the Pavement Condition Index (PCI) methodology. An 8-year plan for pavement projects, a statewide report, individual airport reports, an APMS procedures manual, and an executive summary were also produced. During the 2010 project, APTech developed an Interactive Data Exchange Application (IDEA) that is accessed via ADOT's web page. This has greatly facilitated the access and use of the pavement management information. To view the program, please visit:

<http://azdot.gov/planning/airportdevelopment/development-and-planning/airport-pavement-management-system>. In addition, APTech conducted a training course on the PCI procedure and the PAVER™ pavement management software.

During the 2013 update, the scope of work was expanded to include falling weight deflectometer (FWD) testing and coring. The collected data was used to determine the structural condition of the pavements and to calculate Pavement Classification Numbers (PCNs) for all pavements except T-hangars.

The APMS and the APPP have been highly successful, as evidenced by its receipt of the National Association of State Aviation Officials (NASAO) Most Innovative State Program Award and the Arizona State Quality Award. The Aeronautics Group is now able to proactively manage the pavement infrastructure at airports around the state with software that can help to identify pavement-related needs and develop prioritized lists of pavement-related projects. Individual airports have reported that it is much easier to plan ahead for pavement M&R using the results of the APMS.



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
Phoenix Sky Harbor International Airport Airfield Pavement Assessment (Phoenix, AZ)	2014	N/A

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
City of Phoenix Aviation Department	<b>\$260,394</b>	<b>\$260,394</b>

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

The Phoenix Sky Harbor International Airport has an extensive pavement network, which represents a major infrastructure investment to the City of Phoenix (City). In order to protect this investment, the City contracted with APTech to develop a pavement maintenance management program (PMMP) that will allow the pavements to be managed in a cost efficient manner.

To develop the PMMP, APTech conducted an airfield pavement assessment which included reviewing records, updating maps, conducting PCI inspections, customizing the PAVER™ database, and developing APMS reports. The data collected during the assessment were used to determine M&R needs and to develop the PMMP. APTech performed the PCI inspections on the runways and taxiways at night so as not to interfere with regular traffic at the airport.

In addition to the mainline pavements, APTech incorporated the shoulders, blast pads, and infield pavements into the APMS. APTech also performed a cursory visual evaluation and providing general M&R recommendations for the airside service roads.

APTech performed nondestructive testing (NDT) using its FWD on select airfield pavement, such as those identified during the PCI inspections as requiring further investigation. APTech also developed PCNs for the airside pavements in accordance with the requirements in Federal Aviation Administration (FAA) Advisory Circular 150/5335-5B, Standardized Method of Reporting Airport Pavement Strength – PCN and FAA's COMFAA software. The resulting PCNs were converted to allowable loads for each gear type (single, dual, dual tandem, and so on) using the FAA's supporting spreadsheet.

Finally, APTech developed an IDEA, which is an interactive web-formatted program used to disseminate the results and recommendations of the pavement management update without requiring knowledge of the use of PAVER™.



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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION (City and State)	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Town of Cave Creek Pavement Management System Implementation (Cave Creek, AZ)	2014	N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Town of Cave Creek, AZ	\$70,810	\$70,810

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

The Town of Cave Creek, Arizona includes approximately 80 centerline miles of paved roadway in its pavement network. The Town wished to protect its capital investment in the pavement network by promoting efficient and effective pavement maintenance and management. To meet this goal, the Town selected APtech to implement a pavement management system.

APtech determined that PAVER™, a structured pavement management system, would provide the best functionality at the most reasonable cost. To implement this system, APtech performed a pavement network definition and condition assessment, developed a pavement database, calculated pavement deterioration estimates, developed an M&R plan, installed the PAVER™ software, and trained the Town staff in the use of the system.



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
<b>Design-Build RFP Preparation for US-36 (Devner, CO)</b>	<b>2013</b>	<b>N/A</b>

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
<b>Shannon &amp; Wilson, Inc.</b>	<b>\$12,754</b>	<b>\$9,900</b>

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

As a subconsultant for Shannon & Wilson, Inc., APTEch provided pavement and material expertise for the design team's (comprised of Shannon & Wilson, Atkins, Kiewit, and Isolux as the concessionaire) proposal for this Colorado Department of Transportation (CDOT) and Colorado High Performance Transportation Enterprise Public-Private Partnership Design-Build Project for US Route 36.

APTEch was responsible for the evaluation and design of alternative pavement sections using the American Association of State Highway and Transportation Officials (AASHTO) Guide for Design of Pavement Structures (1993) and the AASHTO Mechanistic-Empirical Pavement Design Guide—Manual of Practice (2008). APTEch was also responsible for developing and reviewing applicable portions of the project proposal, as well as responding to design team and CDOT requests.



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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION (City and State)	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Douglas County Pavement Forensic Analysis (Douglas County, CO)	2014	N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Douglas County Department of Public Works	\$150,249	\$84,607

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

In 2006, the Douglas County Department of Public Works selected a contractor to construct two new street segments on Chambers Road and West Mainstreet in Parker, Colorado. In 2008, personnel from both Douglas County and the Town of Parker observed significant stripping and rapid deterioration occurring in the top hot-mix asphalt (HMA) layer. After more sampling, testing, and negotiations, the County and Contractor reached an agreement to remove and replace certain portions of both Chambers Road and Mainstreet under the original performance bond and to extend the performance bond through May 1, 2012. In April 2012, before the end of the extended warranty, Douglas County completed another pavement evaluation, which noted the presence of stripping, cracking, raveling, and segregation. In October 2012, Douglas County contracted with APTEch to inspect the streets, identify the cause(s) of the observed distresses, and make appropriate recommendations for the rehabilitation of both streets.

APTEch conducted a records review, PCI survey, materials sampling, and lab testing to evaluate pavement conditions on Chambers Road, Mainstreet, and Hilltop Road (for comparison purposes). APTEch used the collected data to develop recommendations for repairs in accordance with the terms of the County's agreement with their contractor. In addition, APTEch provided expert witness support to Douglas County and its attorneys.



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6. ADDITIONAL INFORMATION

a. PROVIDE ANY ADDITIONAL INFORMATION YOU FEEL MAY BE NECESSARY TO DESCRIBE YOUR FIRMS QUALIFICATIONS. (ATTACH ADDITIONAL SHEETS AS NEEDED.)

Applied Pavement Technology, Inc. (APTech) owns and operates testing equipment used as part of its pavement evaluation and construction inspection services. APTech owns a Dynatest 8081 heavyweight model falling weight deflectometer (FWD), which is a specialized pavement testing device that facilitates the rapid, accurate, and nondestructive characterization of the structural condition of all types of pavements. The FWD is used in both the routine and specialized testing of airfield and highway pavements. This state-of-the-art device is capable of applying loadings to a pavement that are similar in magnitude and duration to those produced by moving wheel loads, including those of even the heaviest aircraft. It is able to apply loads up to 55,000 pounds. FWD testing allows for the evaluation of multiple locations in a short period of time without disturbing the pavement structure.

APTech also owns and operates a trailer-mounted material sampling device that can be used to obtain core and auger samples of the pavement and subsurface layers. The coring apparatus is applicable for both hot-mix asphalt (HMA) and portland cement concrete (PCC) surfaced pavements. Using diamond-tipped core barrels of various sizes, the device can obtain core samples up to 24-inches long and with diameters ranging from 3 to 12-inches. The mast of the apparatus is omni-directional, meaning it can be used to obtain cores from walls and low-lying ceilings in addition to pavements. Samples obtained by the device can be tested in a number of ways to determine layer thickness, unit weight, strength, stiffness, and other intrinsic material properties. The auger apparatus provides a means of obtaining samples of all unbound layer materials that exist below the pavement surface, up to a depth of 10-feet. Tests can then be performed on the extracted samples to determine moisture content, gradation, densities, California Bearing Ratios (CBRs), and overall material classification.

APTech owns a dynamic cone penetrometer (DCP), which is a simple device used to obtain in situ subgrade strength measurements in conjunction with a coring program. APTech also owns a pachometer, which is used to detect the presence of ferromagnetic materials, such as steel and iron, embedded in concrete. Its primary function is to determine the thickness of the concrete cover over a steel reinforcement. Additionally, APTech owns a digital faultmeter, air meter, slump cones, beam and cylinder moldings, handheld computers for data collection, and GPS cameras.

APTech also owns a portable seismic pavement analyzer (PSPA). The PSPA is a nondestructive testing (NDT) device that measures the seismic modulus of concrete pavements. It also identifies transitions between asphalt lifts and changes in modulus depth. Using the PSPA, APTech is able to estimate thickness via the impact echo method.

7. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

a.	Percentage of Total Work Attributable to State, Federal and Municipal Government Work:	68.1%
b.	Percentage of Total Work Attributable to Non-Government Work:	31.9%

8. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts.

Signature:  Date: 12/14/2015

Name: Kathryn A. Zimmerman Title: President



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(If a firm has branch offices, complete for each specific branch office seeking work.)

1. Annual Request for Qualifications

a. FIRM (OR BRANCH OFFICE ) NAME:	Applied Pavement Technology, Inc.
b. FIRM (OR BRANCH OFFICE) STREET:	1755 E. Plumb Lane, Suite 264
c. FIRM (OR BRANCH OFFICE) CITY:	Reno
d. FIRM (OR BRANCH OFFICE) STATE:	Nevada
e. FIRM (OR BRANCH OFFICE) ZIP CODE:	89502
f. YEAR ESTABLISHED:	1994
(g1). OWNERSHIP - TYPE:	Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	AZ UTRACS SBC
h. POINT OF CONTACT NAME AND TITLE:	Casey Brooks, Business Development Coordinator
i. POINT OF CONTACT TELEPHONE NUMBER:	217-398-3977
j. POINT OF CONTACT E-MAIL ADDRESS:	<a href="mailto:prequal@appliedpavement.com">prequal@appliedpavement.com</a>
k. NAME OF FIRM (If block 1a is a branch office):	Nevada Branch Office



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2. EMPLOYEES BY DISCIPLINE

a. Discipline Title	b. Function: Primary (P) or Secondary (S)	c. No. of Employees - Firm	d. No. of Employees - Branch
Civil Engineer	P	30	2
Technician/Analyst	P	7	0
Other – Administrative	P	9	1
<b>Total</b>		46	3





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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Margaret R. Covalt, P.E.</b>	b. ROLE IN THIS CONTRACT Principal-In-Charge / Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL <b>31</b>	2. WITH CURRENT FIRM <b>19</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> <b>M.S., Civil Engineering, University of Illinois, 1986</b>	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer AZ, CO, CT, GA, IL, KS, KY, MA, MN, NJ, NM, PA, SC, VA, WA
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author of ASCE's The Arizona Airport Pavement Management System: History and Innovation; Member American Society of Civil Engineers (ASCE); Member Transportation Research Board (TRB); Member Airport Consultants Council (ACC); Member National Society of Professional Engineers (NSPE); Member ASTM

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Arizona Statewide Airport Pavement Management System (APMS) Update (Statewide, AZ)	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Oversaw all aspects of this project, which involved sixty-three airports and included collecting inventory and condition data, preparing maps, developing an 8-year maintenance and rehabilitation (M&R) plan, generating reports, developing an APMS procedures manual, and updating an Interactive Data Exchange Application (IDEA). This project also involved testing with a falling weight deflectometer (FWD) to determine allowable loads and Pavement Classification Numbers (PCNs). Also served as the Project Manager for the 1999 implementation and the 2002, 2006, and 2010 updates. \$1,264,944.		
2.	Phoenix Sky Harbor International APMS Update (Phoenix, AZ)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal-In-Charge for this Airfield and Testing project. Oversaw this project, which included reviewing records, updating maps, conducting Pavement Condition Index (PCI) inspections, updating and customizing the PAVER™ database, developing M&R recommendations, preparing a project report, and creating a geographic information system (GIS) link within PAVER™. In addition, it included calculating PCNs and developing an IDEA. \$260,394.		
3.	New Mexico Statewide APMS Update (Statewide, New Mexico)	2017 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Overseeing all aspects of this project which involves forty-eight airports and includes collecting inventory data, conducting PCI inspections, updating the PAVER™ database, analyzing data, calculating PCNs for the airport runways, developing a multi-year M&R plan, composing reports, developing a web-based IDEA, and conducting training on the use of the PAVER™ software. It also includes a performing a structural analysis of the runway pavements using a heavy-weight FWD and calculating runway PCNs. \$1,216,674.		
4.	Colorado Statewide APMS Update	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. This multi-year project involved pavement management at sixty-three airports. It included conducting PCI surveys, preparing maps, updating the PAVER™ database, performing data analysis, preparing M&R programs, creating a map link to PAVER™, updating the IDEA, and developing reports. During 2012, this project also included a specialized study on materials-related distress (MRD) in Colorado. Also served as the Project Manager for all previous updates dating back to 1996. \$678,038.		
5.	Tucson Airport Authority APMS Update (Tucson, AZ)	2013	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal-In-Charge for this Airfield and Testing Project. This project included records review, map updates, PCI inspections, PAVER™ update and customization, development of M&R recommendations, preparation of a project report, and creation of a GIS link within PAVER™. In addition, it included the determination of PCNs for the airside pavements and training on the use of PAVER™. \$156,983.		



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME	b. ROLE IN THIS CONTRACT	c. YEARS EXPERIENCE	
Kathryn A. Zimmerman, P.E.	Principal-In-Charge / Project Manager	1. TOTAL	2. WITH CURRENT FIRM
		31	20

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S., Civil Engineering, University of Illinois, 1985	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer: AZ; AL; AR; CO; CT; FL; HI; ID; IL; IN; IA; KS; KY; LA; MD; MI; MS; MO; MT; NE; NV; NJ; NM; NY; NC; OH; OR; SC; SD; TN; TX; UT; WA; WV; WI; WY
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author of ICMPA's "Pavement Management's Role in an Asset Management World," Co-Author of FHWA's "Practical Guide for Quality Management of Pavement Condition Data," Member TRB, Member ASCE, Recipient of the National Highway Institute (NHI) Instructor of Excellence Award, Recipient of TRB Blue Ribbon Award

**H. RELEVANT PROJECTS**

1.	(1) TITLE AND LOCATION <i>(City and State)</i> Nevada DOT Transportation Asset Management Plan (TAMP) Development (Statewide, NV)	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Value Analysis and Highway project. Directing the development of a TAMP that includes pavements, bridges, and ancillary assets. Facilitating project meetings and technical work group activities to obtain the information needed to complete the TAMP. \$383,728.	Professional Services 2016 (in progress)
		<input checked="" type="checkbox"/> Check if project performed with current firm
2.	(1) TITLE AND LOCATION <i>(City and State)</i> Ohio DOT TAMP Development (Statewide, OH)	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Value Analysis, Life Cycle Costing, and Highway project. Developing a TAMP for pavements, bridges, and culverts that leads to changes in the agency's existing processes to reduce life cycle costs and preserve system conditions under constrained funding projections. The development of the TAMP includes a life cycle assessment of current pavement and bridge management strategies, a risk management assessment, and facilitating meetings with Technical Work Groups. \$399,813.	Professional Services 2015 (in progress)
		<input checked="" type="checkbox"/> Check if project performed with current firm
3.	(1) TITLE AND LOCATION <i>(City and State)</i> Town of Cave Creek Pavement Management System Implementation (Cave Creek, AZ)	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Principal-In-Charge for this Streets project. Oversaw all aspects of the project which included performing network definition, developing a database, conducting a condition inspection, and developing a multi-year M&R program. \$70,810.	Professional Services 2014
		<input checked="" type="checkbox"/> Check if project performed with current firm
4.	(1) TITLE AND LOCATION <i>(City and State)</i> FHWA Transportation Performance Management IDIQ (Nationwide)	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manger for this Indefinite Delivery Indefinite Quantity (IDIQ) Transportation Research Project. Overseeing the day-to-day management of research task orders related to the establishment of performance-based transportation management at the Federal level. Task Orders include Technical Support, Support for the Bridge Condition Performance Measure, and Support for the Pavement Condition Performance Measure. \$620,176.	Professional Services 2017 (in progress)
		<input checked="" type="checkbox"/> Check if project performed with current firm
5.	(1) TITLE AND LOCATION <i>(City and State)</i> Transportation Asset Management (TAM) Gap Analysis Tool (Nationwide)	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Principal Investigator for this Transportation Research Project. Analyzed the need for revisions to the Gap Analysis Tool included in the AASHTO Transportation Asset Management Guide – A Focus on Implementation and developed a spreadsheet tool that met those requirements. Developed a gap analysis tool that was user-friendly and applicable for transportation practitioners and decision makers in the United States. \$148,560.	Professional Services 2014
		<input checked="" type="checkbox"/> Check if project performed with current firm



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Monty J. Wade, P.E.</b>	b. ROLE IN THIS CONTRACT Principal-In-Charge/Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL <b>22</b>	2. WITH CURRENT FIRM <b>18</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> <b>M.S., Civil Engineering, University of Illinois, 1993</b>	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer, AZ, FL, IL, IA, MI, MO, OH, TN; Canadian Provinces AB, MB, NL, NS, ON, SK
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author ICMPA's "The Use of GPS-Based Distress Mapping to Improve Pavement Management;" Member, ACC; Member, ASCE,

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<b>Arizona Statewide APMS Update (Statewide, AZ)</b>	<b>2015</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Senior Engineer for this Airfield and Testing project. Provided Quality Assurance/Quality Control (QA/QC) support for the FWD analysis and PCN calculation portions of the project. \$1,264,944.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	<b>Phoenix Sky Harbor International Airport Airside Pavement Assessment (Phoenix, AZ)</b>	<b>2014</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield and Testing project. Oversaw all aspects of the project, which included conducting PCI inspections, performing FWD testing, updating the PAVER™ database, performing a condition evaluation for airside service roads, developing M&amp;R recommendations, calculating PCNs, and assisting with developing a web-based IDEA. \$260,394.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	<b>Houston Airport System Asset Condition Assessments (Houston, TX)</b>	<b>2014</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield and Testing project. Oversaw all aspects of the project which included conducting PCI inspections and updating the APMS for the runways and taxiways, conducting FWD testing, analyzing data, converting the existing AIRPAV™ database to PAVER™, determining PCNs, and developing M&amp;R recommendations. Nearly 42 million square feet of pavement were inspected. Also provided training on the business process for maintaining the APMS and proper M&amp;R techniques. \$423,338.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	<b>Tucson Airport Authority APMS Update (Tucson, AZ)</b>	<b>2013</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield and Testing Project. Oversaw all aspects of the project, which included a records review, map updates, PCI inspections, PAVER™ database update and customization, determination of PCNs, development of M&amp;R recommendations, preparation of a project report, and training. \$156,983.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	<b>Phoenix Deer Valley Airport PCN Analysis (Phoenix, AZ)</b>	<b>2014</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield Project. Performed a records review, calculated PCNs, performed a geotechnical investigation, and developed a pavement strength report. \$29,803.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	



**ATTACHMENT I – General Qualifications**

**ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:  
ADSP015-00004729**

**STATE PROCUREMENT OFFICE  
Department of Administration  
100 North 15<sup>th</sup> Avenue, Suite 201  
Phoenix, Arizona 85007**

**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Kyle M. Potvin, P.E.</b>	b. ROLE IN THIS CONTRACT Project Manager/Senior Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 21	2. WITH CURRENT FIRM 14

d. LOCATION *(City and State)* Applied Pavement Technology, Inc. (Waunakee, WI)

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S., Land Surveying, Michigan Technological University, 1997 A.S., Civil Engineering, Michigan Technological University, 1996	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer LA, MI, NV, ND, WI
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*

**Member, ASTM; Member, ASCE; Member, Experimental Aircraft Association**

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<b>Arizona Statewide APMS Update (Statewide, AZ)</b>	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Senior Engineer for this Airfield and Testing project. Oversaw all fieldwork. Conducted PCI inspections, oversaw mapping, updated the inventory and network definition, developed and customized the database, and analyzed data. Assisted with developing an IDEA and project reports. Also served as a Project Engineer for the 2002, 2006, and 2010 updates. \$1,264,944.		
2.	<b>Michigan Statewide APMS Update (Statewide, MI)</b>	2016 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Managing day-to-day aspects of the project including conducting PCI inspections, developing and customizing the PAVER™ database, analyzing data, assisting with developing a web-based IDEA, and preparing reports. Also served as the Project Manager for the 2005 to 2008 update and 2009 to 2013 update. \$669,810.		
3.	<b>Wisconsin Statewide APMS Update (Statewide, WI)</b>	2016 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Managing the day-to-day aspects of the project, including updating and customizing the APMS database, conducting PCI inspections, calculating PCNs, analyzing the APMS, developing a 5-year CIP, and preparing project reports. Also served as the Project Manager for the 2012 update and the 2009 to 2011 update. \$1,253,268.		
4.	<b>Hawaii Statewide APMS Update (Statewide, HI)</b>	2016 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Lead Engineer for this Airfield and Testing project. Responsible for coordinating, planning, and conducting all fieldwork including PCI inspections and structural evaluation using an FWD. Also responsible for collecting historic construction records, updating the PAVER™ database, and preparing project reports. Also served as a Project Engineer for the 2005 update. \$1,417,508.		
5.	<b>Houston Airport System Asset Condition Assessments (Houston, TX)</b>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Senior Engineer for this Airfield and Testing project. Converted existing APMS data from the previously used AIRPAV™ software to PAVER™. \$423,338.		



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Stephen B. Seeds, P.E.</b>	b. ROLE IN THIS CONTRACT Project Manager/Senior Engineer	c. YEARS EXPERIENCE	
		1. TOTAL <b>37</b>	2. WITH CURRENT FIRM <b>15</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Reno, NV)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S., Engineering, University of Texas at Austin, 1980	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer Nevada and California
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Member, TRB; Member, California Pavement Preservation Task Group; Member, International Association for Asphalt Pavements; Member, ASCE; Member, Community Associations Institute; Recipient of the NHI Instructor of Excellence Award

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Pavement M&R for Jefferson County Parking Lots (Jefferson County, CO)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Parking Lot and Testing project. Oversaw all aspects of the project which included conducting a visual inspection, reviewing data, performing PCI surveys, coordinating and analyzing coring and boring samples, developing a parking lot database, developing M&R recommendations, and preparing a report. Also developed materials and construction requirements and prepared a request for bids. \$41,200.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	Pavement Engineering and Management Support for Arrow Creek Homeowners Association (Reno, NV)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets project. Overseeing all aspects of the project, which includes conducting pavement condition surveys, providing construction oversight, preparing bid packages, and developing annual M&R programs, as well as long-term pavement management plans used in developing the reserve study. Annual project since 2004. Served as Technical Advisor and Expert Witness in 2008 Pavement Forensics project. \$35,959 (most recent project).	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	Douglas County Forensic Pavement Analysis (Douglas County, CO)	2013	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets, Testing, and Forensic Engineering project. Oversaw all aspects of the project including a records review, pavement condition surveys, materials testing, and developing recommendations for pavement rehabilitation. Also served as Technical Advisor and Expert Witness in litigation over premature failure of pavement. \$84,607.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	Pavement Engineering and Management Support for Lake Glenn Manor Homeowners Association (Carson City, NV)	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets project. Evaluated the existing pavement network and projected the type and timing of the next major rehabilitation treatment. Developed a long-term (30-year) M&R plan that can be used by the association's reserve specialist to develop the Homeowners Association's next reserve study. Prepared a request for bids, and provided quality assurance support during construction. Also served as the Project Manager for the 2011 project. \$6,610.	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	Arizona Department of Transportation Evaluation of Maintenance Strategies (Statewide, AZ)	2012	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Transportation Research Study. Evaluated field performance data from wearing course and preventive maintenance experimental treatment projects to determine which provided the best performance in terms of weathering, flushing, skid resistance, thermal cracking, and fatigue cracking and to identify recommend those that were most effective. \$115,000.	<input checked="" type="checkbox"/> Check if project performed with current firm	



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Mark P. Gardner, P.E.</b>	b. ROLE IN THIS CONTRACT Project Manager/Senior Engineer	c. YEARS EXPERIENCE	
		1. TOTAL <b>32</b>	2. WITH CURRENT FIRM <b>4</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S., Civil Engineering, Texas A&M University, 1982	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer Texas
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author, FHWA's "Procedures for Defining Management Strategies and Targets Associated with Transportation Goals," Member, TRB; Member, TRB Committee AFD60 Flexible Pavement Design; Member, ASCE; Recipient, NHI Instructor of Excellence Award

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Town of Cave Creek Pavement Management System (Cave Creek, AZ)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets and Testing project. Oversaw all aspects of the project which included performing network definition, developing a PAVER™ database, conducting PCI inspections, and developing a multi-year M&R program. \$70,810.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	City of Goodyear Pavement Management System (Goodyear, AZ)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets and Testing project. Evaluated the pavement management system, recommended improvements in processes, evaluated City experience with selected treatments, and recommended greater use or specific preservation approaches. Supported the Public Works Director in presentation of findings to City Council, highlighting current conditions and budget needs to meet performance goals. \$61,514.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	City of Peoria Street Asset Inventory and Pavement Management System Update (Peoria, IL)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets and Testing project. Oversaw all aspects of the project which included creating an asset inventory for street signs and lights, completing automated surveys for 1,000 lane-miles of city streets and 100 miles of alleys, conducting PCI surveys, analyzing data, updating the PAVER™ database, improving the City GIS showing roadway assets, and supporting the Public Works Director in a presenting network conditions and budget scenarios to City Council for use in budget planning discussions. \$488,743.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	Line 6B Haul Road Evaluation (Michigan and Indiana)	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets, Highways, Testing, and Inspection project. Oversaw the evaluation of the impact of heavy equipment on approximately 2,700 miles of roadway through collection and analysis of pre- and post-construction condition data. \$468,450.	<input checked="" type="checkbox"/>	Check if project performed with current firm
5.	Review of Engineering Consultants International (PVT) LTD's Designs for Abu Dhabi Port Roads. (Abu Dhabi, United Arab Emirates)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Design Reeviw project. Provided a peer review and opinions for design plans for Abu Dhabi Port Roads. \$9,769.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
<b>Arizona Statewide APMS Update (Statewide, AZ)</b>	<b>2015</b>	<b>N/A</b>

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
<b>ADOT Aeronautics Group</b>	<b>\$1,310,318</b>	<b>\$1,264,944</b>

**f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT** *(include scope, size, and length of project)*

In 2000, Applied Pavement Technology, Inc. (APTech) established the Arizona airport pavement management system (APMS) for the Arizona Department of Transportation (ADOT) Aeronautics Group to provide them with a tool to proactively manage the pavement infrastructure at fifty-three Arizona airports (the system now includes sixty-six airports).

The initial study, performed in 2000, indicated that state-funding levels were insufficient to sponsor all necessary pavement maintenance and rehabilitation (M&R) projects. Based on the results of the pavement management study conducted by APTech, the Aeronautics Group initiated the Airport Pavement Preservation Program (APPP). The APPP allows the state to make the best use of its limited budget by funding those work types that have historically proven to provide the most benefit per dollar expended. Because it is a state-level program, the Aeronautics Group can provide airports with funding for crack sealing, slurry seals, thin overlays, and concrete restoration. This is especially important for smaller facilities or those located in sparsely-populated areas, which could not otherwise afford extensive maintenance efforts.

Due to ADOT's satisfaction with APTech's work, the Aeronautics Group retained APTech to update its APMS again in 2003, 2006, 2010, and 2013. During these projects, APTech updated the systems inventory and maps, and conducted pavement inspections using the Pavement Condition Index (PCI) methodology. An 8-year plan for pavement projects, a statewide report, individual airport reports, an APMS procedures manual, and an executive summary were also produced. During the 2010 project, APTech developed an Interactive Data Exchange Application (IDEA) that is accessed via ADOT's web page. This has greatly facilitated the access and use of the pavement management information. To view the program, please visit:

<http://azdot.gov/planning/airportdevelopment/development-and-planning/airport-pavement-management-system>. In addition, APTech conducted a training course on the PCI procedure and the PAVER™ pavement management software.

During the 2013 update, the scope of work was expanded to include falling weight deflectometer (FWD) testing and coring. The collected data was used to determine the structural condition of the pavements and to calculate Pavement Classification Numbers (PCNs) for all pavements except T-hangers.

The APMS and the APPP have been highly successful, as evidenced by its receipt of the National Association of State Aviation Officials (NASAO) Most Innovative State Program Award and the Arizona State Quality Award. The Aeronautics Group is now able to proactively manage the pavement infrastructure at airports around the state with software that can help to identify pavement-related needs and develop prioritized lists of pavement-related projects. Individual airports have reported that it is much easier to plan ahead for pavement M&R using the results of the APMS.



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
Phoenix Sky Harbor International Airport Airfield Pavement Assessment (Phoenix, AZ)	2014	N/A

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
City of Phoenix Aviation Department	<b>\$260,394</b>	<b>\$260,394</b>

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

The Phoenix Sky Harbor International Airport has an extensive pavement network, which represents a major infrastructure investment to the City of Phoenix (City). In order to protect this investment, the City contracted with APTech to develop a pavement maintenance management program (PMMP) that will allow the pavements to be managed in a cost efficient manner.

To develop the PMMP, APTech conducted an airfield pavement assessment which included reviewing records, updating maps, conducting PCI inspections, customizing the PAVER™ database, and developing APMS reports. The data collected during the assessment were used to determine M&R needs and to develop the PMMP. APTech performed the PCI inspections on the runways and taxiways at night so as not to interfere with regular traffic at the airport.

In addition to the mainline pavements, APTech incorporated the shoulders, blast pads, and infield pavements into the APMS. APTech also performed a cursory visual evaluation and providing general M&R recommendations for the airside service roads.

APTech performed nondestructive testing (NDT) using its FWD on select airfield pavement, such as those identified during the PCI inspections as requiring further investigation. APTech also developed PCNs for the airside pavements in accordance with the requirements in Federal Aviation Administration (FAA) Advisory Circular 150/5335-5B, Standardized Method of Reporting Airport Pavement Strength – PCN and FAA's COMFAA software. The resulting PCNs were converted to allowable loads for each gear type (single, dual, dual tandem, and so on) using the FAA's supporting spreadsheet.

Finally, APTech developed an IDEA, which is an interactive web-formatted program used to disseminate the results and recommendations of the pavement management update without requiring knowledge of the use of PAVER™.



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*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
Town of Cave Creek Pavement Management System Implementation (Cave Creek, AZ)	2014	N/A

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Town of Cave Creek, AZ	\$70,810	\$70,810

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

The Town of Cave Creek, Arizona includes approximately 80 centerline miles of paved roadway in its pavement network. The Town wished to protect its capital investment in the pavement network by promoting efficient and effective pavement maintenance and management. To meet this goal, the Town selected APtech to implement a pavement management system.

APtech determined that PAVER™, a structured pavement management system, would provide the best functionality at the most reasonable cost. To implement this system, APtech performed a pavement network definition and condition assessment, developed a pavement database, calculated pavement deterioration estimates, developed an M&R plan, installed the PAVER™ software, and trained the Town staff in the use of the system.



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Phoenix, Arizona 85007

5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION (City and State)	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Design-Build RFP Preparation for US-36 (Devner, CO)	2013	N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Shannon & Wilson, Inc.	\$12,754	\$9,900

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

As a subconsultant for Shannon & Wilson, Inc., APTEch provided pavement and material expertise for the design team's (comprised of Shannon & Wilson, Atkins, Kiewit, and Isolux as the concessionaire) proposal for this Colorado Department of Transportation (CDOT) and Colorado High Performance Transportation Enterprise Public-Private Partnership Design-Build Project for US Route 36.

APTEch was responsible for the evaluation and design of alternative pavement sections using the American Association of State Highway and Transportation Officials (AASHTO) Guide for Design of Pavement Structures (1993) and the AASHTO Mechanistic-Empirical Pavement Design Guide—Manual of Practice (2008). APTEch was also responsible for developing and reviewing applicable portions of the project proposal, as well as responding to design team and CDOT requests.



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
Douglas County Pavement Forensic Analysis (Douglas County, CO)	2014	N/A

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Douglas County Department of Public Works	<b>\$150,249</b>	<b>\$84,607</b>

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

In 2006, the Douglas County Department of Public Works selected a contractor to construct two new street segments on Chambers Road and West Mainstreet in Parker, Colorado. In 2008, personnel from both Douglas County and the Town of Parker observed significant stripping and rapid deterioration occurring in the top hot-mix asphalt (HMA) layer. After more sampling, testing, and negotiations, the County and Contractor reached an agreement to remove and replace certain portions of both Chambers Road and Mainstreet under the original performance bond and to extend the performance bond through May 1, 2012. In April 2012, before the end of the extended warranty, Douglas County completed another pavement evaluation, which noted the presence of stripping, cracking, raveling, and segregation. In October 2012, Douglas County contracted with APTEch to inspect the streets, identify the cause(s) of the observed distresses, and make appropriate recommendations for the rehabilitation of both streets.

APTEch conducted a records review, PCI survey, materials sampling, and lab testing to evaluate pavement conditions on Chambers Road, Mainstreet, and Hilltop Road (for comparison purposes). APTEch used the collected data to develop recommendations for repairs in accordance with the terms of the County's agreement with their contractor. In addition, APTEch provided expert witness support to Douglas County and its attorneys.



ATTACHMENT I – General Qualifications

ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:  
ADSP016-00005912

STATE PROCUREMENT OFFICE  
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Phoenix, Arizona 85007

6. ADDITIONAL INFORMATION

a. PROVIDE ANY ADDITIONAL INFORMATION YOU FEEL MAY BE NECESSARY TO DESCRIBE YOUR FIRMS QUALIFICATIONS. (ATTACH ADDITIONAL SHEETS AS NEEDED.)

Applied Pavement Technology, Inc. (APTech) owns and operates testing equipment used as part of its pavement evaluation and construction inspection services. APTech owns a Dynatest 8081 heavyweight model falling weight deflectometer (FWD), which is a specialized pavement testing device that facilitates the rapid, accurate, and nondestructive characterization of the structural condition of all types of pavements. The FWD is used in both the routine and specialized testing of airfield and highway pavements. This state-of-the-art device is capable of applying loadings to a pavement that are similar in magnitude and duration to those produced by moving wheel loads, including those of even the heaviest aircraft. It is able to apply loads up to 55,000 pounds. FWD testing allows for the evaluation of multiple locations in a short period of time without disturbing the pavement structure.

APTech also owns and operates a trailer-mounted material sampling device that can be used to obtain core and auger samples of the pavement and subsurface layers. The coring apparatus is applicable for both hot-mix asphalt (HMA) and portland cement concrete (PCC) surfaced pavements. Using diamond-tipped core barrels of various sizes, the device can obtain core samples up to 24-inches long and with diameters ranging from 3 to 12-inches. The mast of the apparatus is omni-directional, meaning it can be used to obtain cores from walls and low-lying ceilings in addition to pavements. Samples obtained by the device can be tested in a number of ways to determine layer thickness, unit weight, strength, stiffness, and other intrinsic material properties. The auger apparatus provides a means of obtaining samples of all unbound layer materials that exist below the pavement surface, up to a depth of 10-feet. Tests can then be performed on the extracted samples to determine moisture content, gradation, densities, California Bearing Ratios (CBRs), and overall material classification.

APTech owns a dynamic cone penetrometer (DCP), which is a simple device used to obtain in situ subgrade strength measurements in conjunction with a coring program. APTech also owns a pachometer, which is used to detect the presence of ferromagnetic materials, such as steel and iron, embedded in concrete. Its primary function is to determine the thickness of the concrete cover over a steel reinforcement. Additionally, APTech owns a digital faultmeter, air meter, slump cones, beam and cylinder moldings, handheld computers for data collection, and GPS cameras.

APTech also owns a portable seismic pavement analyzer (PSPA). The PSPA is a nondestructive testing (NDT) device that measures the seismic modulus of concrete pavements. It also identifies transitions between asphalt lifts and changes in modulus depth. Using the PSPA, APTech is able to estimate thickness via the impact echo method.

7. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

a.	Percentage of Total Work Attributable to State, Federal and Municipal Government Work:	68.1%
b.	Percentage of Total Work Attributable to Non-Government Work:	31.9%

8. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts.

Signature:  Date: 12/14/2015

Name: Kathryn A. Zimmerman Title: President



ATTACHMENT I – General Qualifications  
ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:  
ADSP016-00005912

STATE PROCUREMENT OFFICE  
Department of Administration  
100 North 15<sup>th</sup> Avenue, Suite 201  
Phoenix, Arizona 85007

(If a firm has branch offices, complete for each specific branch office seeking work.)

1. **Annual Request for Qualifications**

a. FIRM (OR BRANCH OFFICE ) NAME:	Applied Pavement Technology, Inc.
b. FIRM (OR BRANCH OFFICE) STREET:	7212 McNeil Drive, #201
c. FIRM (OR BRANCH OFFICE) CITY:	Austin
d. FIRM (OR BRANCH OFFICE) STATE:	Texas
e. FIRM (OR BRANCH OFFICE) ZIP CODE:	78729
f. YEAR ESTABLISHED:	1994
(g1). OWNERSHIP - TYPE:	Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	AZ UTRACS SBC
h. POINT OF CONTACT NAME AND TITLE:	Casey Brooks, Business Development Coordinator
i. POINT OF CONTACT TELEPHONE NUMBER:	217-398-3977
j. POINT OF CONTACT E-MAIL ADDRESS:	<a href="mailto:prequal@appliedpavement.com">prequal@appliedpavement.com</a>
k. NAME OF FIRM (If block 1a is a branch office):	Texas Branch Office



ATTACHMENT I – General Qualifications

ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:  
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Phoenix, Arizona 85007

2. EMPLOYEES BY DISCIPLINE

a. Discipline Title	b. Function: Primary (P) or Secondary (S)	c. No. of Employees - Firm	d. No. of Employees - Branch
Civil Engineer	P	30	2
Technician/Analyst	P	7	0
Other – Administrative	P	9	0
<b>Total</b>		46	2





**ATTACHMENT I – General Qualifications**

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**STATE PROCUREMENT OFFICE  
Department of Administration  
100 North 15<sup>th</sup> Avenue, Suite 201  
Phoenix, Arizona 85007**

**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Margaret R. Covalt, P.E.</b>	b. ROLE IN THIS CONTRACT Principal-In-Charge / Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL <b>31</b>	2. WITH CURRENT FIRM <b>19</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> <b>M.S., Civil Engineering, University of Illinois, 1986</b>	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer AZ, CO, CT, GA, IL, KS, KY, MA, MN, NJ, NM, PA, SC, VA, WA
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author of ASCE's The Arizona Airport Pavement Management System: History and Innovation; Member American Society of Civil Engineers (ASCE); Member Transportation Research Board (TRB); Member Airport Consultants Council (ACC); Member National Society of Professional Engineers (NSPE); Member ASTM

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Arizona Statewide Airport Pavement Management System (APMS) Update (Statewide, AZ)	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Oversaw all aspects of this project, which involved sixty-three airports and included collecting inventory and condition data, preparing maps, developing an 8-year maintenance and rehabilitation (M&R) plan, generating reports, developing an APMS procedures manual, and updating an Interactive Data Exchange Application (IDEA). This project also involved testing with a falling weight deflectometer (FWD) to determine allowable loads and Pavement Classification Numbers (PCNs). Also served as the Project Manager for the 1999 implementation and the 2002, 2006, and 2010 updates. \$1,264,944.		
2.	Phoenix Sky Harbor International APMS Update (Phoenix, AZ)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal-In-Charge for this Airfield and Testing project. Oversaw this project, which included reviewing records, updating maps, conducting Pavement Condition Index (PCI) inspections, updating and customizing the PAVER™ database, developing M&R recommendations, preparing a project report, and creating a geographic information system (GIS) link within PAVER™. In addition, it included calculating PCNs and developing an IDEA. \$260,394.		
3.	New Mexico Statewide APMS Update (Statewide, New Mexico)	2017 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Overseeing all aspects of this project which involves forty-eight airports and includes collecting inventory data, conducting PCI inspections, updating the PAVER™ database, analyzing data, calculating PCNs for the airport runways, developing a multi-year M&R plan, composing reports, developing a web-based IDEA, and conducting training on the use of the PAVER™ software. It also includes a performing a structural analysis of the runway pavements using a heavy-weight FWD and calculating runway PCNs. \$1,216,674.		
4.	Colorado Statewide APMS Update	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. This multi-year project involved pavement management at sixty-three airports. It included conducting PCI surveys, preparing maps, updating the PAVER™ database, performing data analysis, preparing M&R programs, creating a map link to PAVER™, updating the IDEA, and developing reports. During 2012, this project also included a specialized study on materials-related distress (MRD) in Colorado. Also served as the Project Manager for all previous updates dating back to 1996. \$678,038.		
5.	Tucson Airport Authority APMS Update (Tucson, AZ)	2013	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal-In-Charge for this Airfield and Testing Project. This project included records review, map updates, PCI inspections, PAVER™ update and customization, development of M&R recommendations, preparation of a project report, and creation of a GIS link within PAVER™. In addition, it included the determination of PCNs for the airside pavements and training on the use of PAVER™. \$156,983.		



**ATTACHMENT I – General Qualifications**

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Department of Administration  
100 North 15<sup>th</sup> Avenue, Suite 201  
Phoenix, Arizona 85007**

**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Kathryn A. Zimmerman, P.E.</b>	b. ROLE IN THIS CONTRACT Principal-In-Charge / Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL <b>31</b>	2. WITH CURRENT FIRM <b>20</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> <b>M.S., Civil Engineering, University of Illinois, 1985</b>	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer: AZ; AL; AR; CO; CT; FL; HI; ID; IL; IN; IA; KS; KY; LA; MD; MI; MS; MO; MT; NE; NV; NJ; NM; NY; NC; OH; OR; SC; SD; TN; TX; UT; WA; WV; WI; WY
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author of ICMPA's "Pavement Management's Role in an Asset Management World," Co-Author of FHWA's "Practical Guide for Quality Management of Pavement Condition Data," Member TRB, Member ASCE, Recipient of the National Highway Institute (NHI) Instructor of Excellence Award, Recipient of TRB Blue Ribbon Award

**H. RELEVANT PROJECTS**

1.	(1) TITLE AND LOCATION <i>(City and State)</i> <b>Nevada DOT Transportation Asset Management Plan (TAMP) Development (Statewide, NV)</b>	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Value Analysis and Highway project. Directing the development of a TAMP that includes pavements, bridges, and ancillary assets. Facilitating project meetings and technical work group activities to obtain the information needed to complete the TAMP. \$383,728.</b>	Professional Services <b>2016 (in progress)</b>
		<input checked="" type="checkbox"/> Check if project performed with current firm
2.	(1) TITLE AND LOCATION <i>(City and State)</i> <b>Ohio DOT TAMP Development (Statewide, OH)</b>	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Value Analysis, Life Cycle Costing, and Highway project. Developing a TAMP for pavements, bridges, and culverts that leads to changes in the agency's existing processes to reduce life cycle costs and preserve system conditions under constrained funding projections. The development of the TAMP includes a life cycle assessment of current pavement and bridge management strategies, a risk management assessment, and facilitating meetings with Technical Work Groups. \$399,813.</b>	Professional Services <b>2015 (in progress)</b>
		<input checked="" type="checkbox"/> Check if project performed with current firm
3.	(1) TITLE AND LOCATION <i>(City and State)</i> <b>Town of Cave Creek Pavement Management System Implementation (Cave Creek, AZ)</b>	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Principal-In-Charge for this Streets project. Oversaw all aspects of the project which included performing network definition, developing a database, conducting a condition inspection, and developing a multi-year M&amp;R program. \$70,810.</b>	Professional Services <b>2014</b>
		<input checked="" type="checkbox"/> Check if project performed with current firm
4.	(1) TITLE AND LOCATION <i>(City and State)</i> <b>FHWA Transportation Performance Management IDIQ (Nationwide)</b>	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manger for this Indefinite Delivery Indefinite Quantity (IDIQ) Transportation Research Project. Overseeing the day-to-day management of research task orders related to the establishment of performance-based transportation management at the Federal level. Task Orders include Technical Support, Support for the Bridge Condition Performance Measure, and Support for the Pavement Condition Performance Measure. \$620,176.</b>	Professional Services <b>2017 (in progress)</b>
		<input checked="" type="checkbox"/> Check if project performed with current firm
5.	(1) TITLE AND LOCATION <i>(City and State)</i> <b>Transportation Asset Management (TAM) Gap Analysis Tool (Nationwide)</b>	(2) YEAR COMPLETED
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Principal Investigator for this Transportation Research Project. Analyzed the need for revisions to the Gap Analysis Tool included in the AASHTO Transportation Asset Management Guide – A Focus on Implementation and developed a spreadsheet tool that met those requirements. Developed a gap analysis tool that was user-friendly and applicable for transportation practitioners and decision makers in the United States. \$148,560.</b>	Professional Services <b>2014</b>
		<input checked="" type="checkbox"/> Check if project performed with current firm



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Phoenix, Arizona 85007**

**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Monty J. Wade, P.E.</b>	b. ROLE IN THIS CONTRACT Principal-In-Charge/Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL <b>22</b>	2. WITH CURRENT FIRM <b>18</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> <b>M.S., Civil Engineering, University of Illinois, 1993</b>	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer, AZ, FL, IL, IA, MI, MO, OH, TN; Canadian Provinces AB, MB, NL, NS, ON, SK
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author ICMPA's "The Use of GPS-Based Distress Mapping to Improve Pavement Management;" Member, ACC; Member, ASCE,

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<b>Arizona Statewide APMS Update (Statewide, AZ)</b>	<b>2015</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Senior Engineer for this Airfield and Testing project. Provided Quality Assurance/Quality Control (QA/QC) support for the FWD analysis and PCN calculation portions of the project. \$1,264,944.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	<b>Phoenix Sky Harbor International Airport Airside Pavement Assessment (Phoenix, AZ)</b>	<b>2014</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield and Testing project. Oversaw all aspects of the project, which included conducting PCI inspections, performing FWD testing, updating the PAVER™ database, performing a condition evaluation for airside service roads, developing M&amp;R recommendations, calculating PCNs, and assisting with developing a web-based IDEA. \$260,394.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	<b>Houston Airport System Asset Condition Assessments (Houston, TX)</b>	<b>2014</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield and Testing project. Oversaw all aspects of the project which included conducting PCI inspections and updating the APMS for the runways and taxiways, conducting FWD testing, analyzing data, converting the existing AIRPAV™ database to PAVER™, determining PCNs, and developing M&amp;R recommendations. Nearly 42 million square feet of pavement were inspected. Also provided training on the business process for maintaining the APMS and proper M&amp;R techniques. \$423,338.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	<b>Tucson Airport Authority APMS Update (Tucson, AZ)</b>	<b>2013</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield and Testing Project. Oversaw all aspects of the project, which included a records review, map updates, PCI inspections, PAVER™ database update and customization, determination of PCNs, development of M&amp;R recommendations, preparation of a project report, and training. \$156,983.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	<b>Phoenix Deer Valley Airport PCN Analysis (Phoenix, AZ)</b>	<b>2014</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield Project. Performed a records review, calculated PCNs, performed a geotechnical investigation, and developed a pavement strength report. \$29,803.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Kyle M. Potvin, P.E.</b>	b. ROLE IN THIS CONTRACT Project Manager/Senior Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 21	2. WITH CURRENT FIRM 14

d. LOCATION *(City and State)* Applied Pavement Technology, Inc. (Waunakee, WI)

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S., Land Surveying, Michigan Technological University, 1997 A.S., Civil Engineering, Michigan Technological University, 1996	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer LA, MI, NV, ND, WI
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*

**Member, ASTM; Member, ASCE; Member, Experimental Aircraft Association**

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<b>Arizona Statewide APMS Update (Statewide, AZ)</b>	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Senior Engineer for this Airfield and Testing project. Oversaw all fieldwork. Conducted PCI inspections, oversaw mapping, updated the inventory and network definition, developed and customized the database, and analyzed data. Assisted with developing an IDEA and project reports. Also served as a Project Engineer for the 2002, 2006, and 2010 updates. \$1,264,944.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	<b>Michigan Statewide APMS Update (Statewide, MI)</b>	2016 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Airfield and Testing project. Managing day-to-day aspects of the project including conducting PCI inspections, developing and customizing the PAVER™ database, analyzing data, assisting with developing a web-based IDEA, and preparing reports. Also served as the Project Manager for the 2005 to 2008 update and 2009 to 2013 update. \$669,810.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	<b>Wisconsin Statewide APMS Update (Statewide, WI)</b>	2016 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Airfield and Testing project. Managing the day-to-day aspects of the project, including updating and customizing the APMS database, conducting PCI inspections, calculating PCNs, analyzing the APMS, developing a 5-year CIP, and preparing project reports. Also served as the Project Manager for the 2012 update and the 2009 to 2011 update. \$1,253,268.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	<b>Hawaii Statewide APMS Update (Statewide, HI)</b>	2016 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Lead Engineer for this Airfield and Testing project. Responsible for coordinating, planning, and conducting all fieldwork including PCI inspections and structural evaluation using an FWD. Also responsible for collecting historic construction records, updating the PAVER™ database, and preparing project reports. Also served as a Project Engineer for the 2005 update. \$1,417,508.	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	<b>Houston Airport System Asset Condition Assessments (Houston, TX)</b>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Senior Engineer for this Airfield and Testing project. Converted existing APMS data from the previously used AIRPAV™ software to PAVER™. \$423,338.	<input checked="" type="checkbox"/> Check if project performed with current firm	



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Stephen B. Seeds, P.E.</b>	b. ROLE IN THIS CONTRACT Project Manager/Senior Engineer	c. YEARS EXPERIENCE	
		1. TOTAL <b>37</b>	2. WITH CURRENT FIRM <b>15</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Reno, NV)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S., Engineering, University of Texas at Austin, 1980	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer Nevada and California
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Member, TRB; Member, California Pavement Preservation Task Group; Member, International Association for Asphalt Pavements; Member, ASCE; Member, Community Associations Institute; Recipient of the NHI Instructor of Excellence Award

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Pavement M&R for Jefferson County Parking Lots (Jefferson County, CO)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Parking Lot and Testing project. Oversaw all aspects of the project which included conducting a visual inspection, reviewing data, performing PCI surveys, coordinating and analyzing coring and boring samples, developing a parking lot database, developing M&R recommendations, and preparing a report. Also developed materials and construction requirements and prepared a request for bids. \$41,200.		
2.	Pavement Engineering and Management Support for Arrow Creek Homeowners Association (Reno, NV)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Streets project. Overseeing all aspects of the project, which includes conducting pavement condition surveys, providing construction oversight, preparing bid packages, and developing annual M&R programs, as well as long-term pavement management plans used in developing the reserve study. Annual project since 2004. Served as Technical Advisor and Expert Witness in 2008 Pavement Forensics project. \$35,959 (most recent project).		
3.	Douglas County Forensic Pavement Analysis (Douglas County, CO)	2013	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Streets, Testing, and Forensic Engineering project. Oversaw all aspects of the project including a records review, pavement condition surveys, materials testing, and developing recommendations for pavement rehabilitation. Also served as Technical Advisor and Expert Witness in litigation over premature failure of pavement. \$84,607.		
4.	Pavement Engineering and Management Support for Lake Glenn Manor Homeowners Association (Carson City, NV)	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Streets project. Evaluated the existing pavement network and projected the type and timing of the next major rehabilitation treatment. Developed a long-term (30-year) M&R plan that can be used by the association's reserve specialist to develop the Homeowners Association's next reserve study. Prepared a request for bids, and provided quality assurance support during construction. Also served as the Project Manager for the 2011 project. \$6,610.		
5.	Arizona Department of Transportation Evaluation of Maintenance Strategies (Statewide, AZ)	2012	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Transportation Research Study. Evaluated field performance data from wearing course and preventive maintenance experimental treatment projects to determine which provided the best performance in terms of weathering, flushing, skid resistance, thermal cracking, and fatigue cracking and to identify recommend those that were most effective. \$115,000.		



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Mark P. Gardner, P.E.</b>	b. ROLE IN THIS CONTRACT Project Manager/Senior Engineer	c. YEARS EXPERIENCE	
		1. TOTAL <b>32</b>	2. WITH CURRENT FIRM <b>4</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S., Civil Engineering, Texas A&M University, 1982	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer Texas
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author, FHWA's "Procedures for Defining Management Strategies and Targets Associated with Transportation Goals," Member, TRB; Member, TRB Committee AFD60 Flexible Pavement Design; Member, ASCE; Recipient, NHI Instructor of Excellence Award

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Town of Cave Creek Pavement Management System (Cave Creek, AZ)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets and Testing project. Oversaw all aspects of the project which included performing network definition, developing a PAVER™ database, conducting PCI inspections, and developing a multi-year M&R program. \$70,810.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	City of Goodyear Pavement Management System (Goodyear, AZ)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets and Testing project. Evaluated the pavement management system, recommended improvements in processes, evaluated City experience with selected treatments, and recommended greater use or specific preservation approaches. Supported the Public Works Director in presentation of findings to City Council, highlighting current conditions and budget needs to meet performance goals. \$61,514.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	City of Peoria Street Asset Inventory and Pavement Management System Update (Peoria, IL)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets and Testing project. Oversaw all aspects of the project which included creating an asset inventory for street signs and lights, completing automated surveys for 1,000 lane-miles of city streets and 100 miles of alleys, conducting PCI surveys, analyzing data, updating the PAVER™ database, improving the City GIS showing roadway assets, and supporting the Public Works Director in a presenting network conditions and budget scenarios to City Council for use in budget planning discussions. \$488,743.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	Line 6B Haul Road Evaluation (Michigan and Indiana)	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets, Highways, Testing, and Inspection project. Oversaw the evaluation of the impact of heavy equipment on approximately 2,700 miles of roadway through collection and analysis of pre- and post-construction condition data. \$468,450.	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	Review of Engineering Consultants International (PVT) LTD's Designs for Abu Dhabi Port Roads. (Abu Dhabi, United Arab Emirates)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Design Reviw project. Provided a peer review and opinions for design plans for Abu Dhabi Port Roads. \$9,769.	<input checked="" type="checkbox"/> Check if project performed with current firm	



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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION (City and State)	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Arizona Statewide APMS Update (Statewide, AZ)	2015	N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
ADOT Aeronautics Group	\$1,310,318	\$1,264,944

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

In 2000, Applied Pavement Technology, Inc. (APTech) established the Arizona airport pavement management system (APMS) for the Arizona Department of Transportation (ADOT) Aeronautics Group to provide them with a tool to proactively manage the pavement infrastructure at fifty-three Arizona airports (the system now includes sixty-six airports).

The initial study, performed in 2000, indicated that state-funding levels were insufficient to sponsor all necessary pavement maintenance and rehabilitation (M&R) projects. Based on the results of the pavement management study conducted by APTech, the Aeronautics Group initiated the Airport Pavement Preservation Program (APPP). The APPP allows the state to make the best use of its limited budget by funding those work types that have historically proven to provide the most benefit per dollar expended. Because it is a state-level program, the Aeronautics Group can provide airports with funding for crack sealing, slurry seals, thin overlays, and concrete restoration. This is especially important for smaller facilities or those located in sparsely-populated areas, which could not otherwise afford extensive maintenance efforts.

Due to ADOT's satisfaction with APTech's work, the Aeronautics Group retained APTech to update its APMS again in 2003, 2006, 2010, and 2013. During these projects, APTech updated the systems inventory and maps, and conducted pavement inspections using the Pavement Condition Index (PCI) methodology. An 8-year plan for pavement projects, a statewide report, individual airport reports, an APMS procedures manual, and an executive summary were also produced. During the 2010 project, APTech developed an Interactive Data Exchange Application (IDEA) that is accessed via ADOT's web page. This has greatly facilitated the access and use of the pavement management information. To view the program, please visit:

<http://azdot.gov/planning/airportdevelopment/development-and-planning/airport-pavement-management-system>. In addition, APTech conducted a training course on the PCI procedure and the PAVER™ pavement management software.

During the 2013 update, the scope of work was expanded to include falling weight deflectometer (FWD) testing and coring. The collected data was used to determine the structural condition of the pavements and to calculate Pavement Classification Numbers (PCNs) for all pavements except T-hangers.

The APMS and the APPP have been highly successful, as evidenced by its receipt of the National Association of State Aviation Officials (NASAO) Most Innovative State Program Award and the Arizona State Quality Award. The Aeronautics Group is now able to proactively manage the pavement infrastructure at airports around the state with software that can help to identify pavement-related needs and develop prioritized lists of pavement-related projects. Individual airports have reported that it is much easier to plan ahead for pavement M&R using the results of the APMS.



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
Phoenix Sky Harbor International Airport Airfield Pavement Assessment (Phoenix, AZ)	2014	N/A

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
City of Phoenix Aviation Department	<b>\$260,394</b>	<b>\$260,394</b>

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

The Phoenix Sky Harbor International Airport has an extensive pavement network, which represents a major infrastructure investment to the City of Phoenix (City). In order to protect this investment, the City contracted with APTech to develop a pavement maintenance management program (PMMP) that will allow the pavements to be managed in a cost efficient manner.

To develop the PMMP, APTech conducted an airfield pavement assessment which included reviewing records, updating maps, conducting PCI inspections, customizing the PAVER™ database, and developing APMS reports. The data collected during the assessment were used to determine M&R needs and to develop the PMMP. APTech performed the PCI inspections on the runways and taxiways at night so as not to interfere with regular traffic at the airport.

In addition to the mainline pavements, APTech incorporated the shoulders, blast pads, and infield pavements into the APMS. APTech also performed a cursory visual evaluation and providing general M&R recommendations for the airside service roads.

APTech performed nondestructive testing (NDT) using its FWD on select airfield pavement, such as those identified during the PCI inspections as requiring further investigation. APTech also developed PCNs for the airside pavements in accordance with the requirements in Federal Aviation Administration (FAA) Advisory Circular 150/5335-5B, Standardized Method of Reporting Airport Pavement Strength – PCN and FAA's COMFAA software. The resulting PCNs were converted to allowable loads for each gear type (single, dual, dual tandem, and so on) using the FAA's supporting spreadsheet.

Finally, APTech developed an IDEA, which is an interactive web-formatted program used to disseminate the results and recommendations of the pavement management update without requiring knowledge of the use of PAVER™.



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
Town of Cave Creek Pavement Management System Implementation (Cave Creek, AZ)	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
	2014	N/A

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Town of Cave Creek, AZ	\$70,810	\$70,810

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

The Town of Cave Creek, Arizona includes approximately 80 centerline miles of paved roadway in its pavement network. The Town wished to protect its capital investment in the pavement network by promoting efficient and effective pavement maintenance and management. To meet this goal, the Town selected APTEch to implement a pavement management system.

APTEch determined that PAVER™, a structured pavement management system, would provide the best functionality at the most reasonable cost. To implement this system, APTEch performed a pavement network definition and condition assessment, developed a pavement database, calculated pavement deterioration estimates, developed an M&R plan, installed the PAVER™ software, and trained the Town staff in the use of the system.



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
<b>Design-Build RFP Preparation for US-36 (Devner, CO)</b>	<b>2013</b>	<b>N/A</b>

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
<b>Shannon &amp; Wilson, Inc.</b>	<b>\$12,754</b>	<b>\$9,900</b>

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

As a subconsultant for Shannon & Wilson, Inc., APTEch provided pavement and material expertise for the design team's (comprised of Shannon & Wilson, Atkins, Kiewit, and Isolux as the concessionaire) proposal for this Colorado Department of Transportation (CDOT) and Colorado High Performance Transportation Enterprise Public-Private Partnership Design-Build Project for US Route 36.

APTEch was responsible for the evaluation and design of alternative pavement sections using the American Association of State Highway and Transportation Officials (AASHTO) Guide for Design of Pavement Structures (1993) and the AASHTO Mechanistic-Empirical Pavement Design Guide—Manual of Practice (2008). APTEch was also responsible for developing and reviewing applicable portions of the project proposal, as well as responding to design team and CDOT requests.



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
Douglas County Pavement Forensic Analysis (Douglas County, CO)	2014	N/A

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Douglas County Department of Public Works	<b>\$150,249</b>	<b>\$84,607</b>

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

In 2006, the Douglas County Department of Public Works selected a contractor to construct two new street segments on Chambers Road and West Mainstreet in Parker, Colorado. In 2008, personnel from both Douglas County and the Town of Parker observed significant stripping and rapid deterioration occurring in the top hot-mix asphalt (HMA) layer. After more sampling, testing, and negotiations, the County and Contractor reached an agreement to remove and replace certain portions of both Chambers Road and Mainstreet under the original performance bond and to extend the performance bond through May 1, 2012. In April 2012, before the end of the extended warranty, Douglas County completed another pavement evaluation, which noted the presence of stripping, cracking, raveling, and segregation. In October 2012, Douglas County contracted with APTEch to inspect the streets, identify the cause(s) of the observed distresses, and make appropriate recommendations for the rehabilitation of both streets.

APTEch conducted a records review, PCI survey, materials sampling, and lab testing to evaluate pavement conditions on Chambers Road, Mainstreet, and Hilltop Road (for comparison purposes). APTEch used the collected data to develop recommendations for repairs in accordance with the terms of the County's agreement with their contractor. In addition, APTEch provided expert witness support to Douglas County and its attorneys.



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6. ADDITIONAL INFORMATION

a. PROVIDE ANY ADDITIONAL INFORMATION YOU FEEL MAY BE NECESSARY TO DESCRIBE YOUR FIRMS QUALIFICATIONS. (ATTACH ADDITIONAL SHEETS AS NEEDED.)

Applied Pavement Technology, Inc. (APTech) owns and operates testing equipment used as part of its pavement evaluation and construction inspection services. APTech owns a Dynatest 8081 heavyweight model falling weight deflectometer (FWD), which is a specialized pavement testing device that facilitates the rapid, accurate, and nondestructive characterization of the structural condition of all types of pavements. The FWD is used in both the routine and specialized testing of airfield and highway pavements. This state-of-the-art device is capable of applying loadings to a pavement that are similar in magnitude and duration to those produced by moving wheel loads, including those of even the heaviest aircraft. It is able to apply loads up to 55,000 pounds. FWD testing allows for the evaluation of multiple locations in a short period of time without disturbing the pavement structure.

APTech also owns and operates a trailer-mounted material sampling device that can be used to obtain core and auger samples of the pavement and subsurface layers. The coring apparatus is applicable for both hot-mix asphalt (HMA) and portland cement concrete (PCC) surfaced pavements. Using diamond-tipped core barrels of various sizes, the device can obtain core samples up to 24-inches long and with diameters ranging from 3 to 12-inches. The mast of the apparatus is omni-directional, meaning it can be used to obtain cores from walls and low-lying ceilings in addition to pavements. Samples obtained by the device can be tested in a number of ways to determine layer thickness, unit weight, strength, stiffness, and other intrinsic material properties. The auger apparatus provides a means of obtaining samples of all unbound layer materials that exist below the pavement surface, up to a depth of 10-feet. Tests can then be performed on the extracted samples to determine moisture content, gradation, densities, California Bearing Ratios (CBRs), and overall material classification.

APTech owns a dynamic cone penetrometer (DCP), which is a simple device used to obtain in situ subgrade strength measurements in conjunction with a coring program. APTech also owns a pachometer, which is used to detect the presence of ferromagnetic materials, such as steel and iron, embedded in concrete. Its primary function is to determine the thickness of the concrete cover over a steel reinforcement. Additionally, APTech owns a digital faultmeter, air meter, slump cones, beam and cylinder moldings, handheld computers for data collection, and GPS cameras.

APTech also owns a portable seismic pavement analyzer (PSPA). The PSPA is a nondestructive testing (NDT) device that measures the seismic modulus of concrete pavements. It also identifies transitions between asphalt lifts and changes in modulus depth. Using the PSPA, APTech is able to estimate thickness via the impact echo method.

7. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

a.	Percentage of Total Work Attributable to State, Federal and Municipal Government Work:	68.1%
b.	Percentage of Total Work Attributable to Non-Government Work:	31.9%

8. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts.

Signature:  Date: 12/14/2015

Name: Kathryn A. Zimmerman Title: President



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(If a firm has branch offices, complete for each specific branch office seeking work.)

1. Annual Request for Qualifications

a. FIRM (OR BRANCH OFFICE ) NAME:	Applied Pavement Technology, Inc.
b. FIRM (OR BRANCH OFFICE) STREET:	1108 Stephenson Lane, Suite 114
c. FIRM (OR BRANCH OFFICE) CITY:	Wauunakee
d. FIRM (OR BRANCH OFFICE) STATE:	Wisconsin
e. FIRM (OR BRANCH OFFICE) ZIP CODE:	65697
f. YEAR ESTABLISHED:	1994
(g1). OWNERSHIP - TYPE:	Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	AZ UTRACS SBC
h. POINT OF CONTACT NAME AND TITLE:	Casey Brooks, Business Development Coordinator
i. POINT OF CONTACT TELEPHONE NUMBER:	217-398-3977
j. POINT OF CONTACT E-MAIL ADDRESS:	<a href="mailto:prequal@appliedpavement.com">prequal@appliedpavement.com</a>
k. NAME OF FIRM (If block 1a is a branch office):	Wisconsin Branch Office



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2. EMPLOYEES BY DISCIPLINE

a. Discipline Title	b. Function: Primary (P) or Secondary (S)	c. No. of Employees - Firm	d. No. of Employees - Branch
Civil Engineer	P	30	4
Technician/Analyst	P	7	1
Other – Administrative	P	9	0
<b>Total</b>		46	5





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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Margaret R. Covalt, P.E.</b>	b. ROLE IN THIS CONTRACT Principal-In-Charge / Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL <b>31</b>	2. WITH CURRENT FIRM <b>19</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> <b>M.S., Civil Engineering, University of Illinois, 1986</b>	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer AZ, CO, CT, GA, IL, KS, KY, MA, MN, NJ, NM, PA, SC, VA, WA
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author of ASCE's The Arizona Airport Pavement Management System: History and Innovation; Member American Society of Civil Engineers (ASCE); Member Transportation Research Board (TRB); Member Airport Consultants Council (ACC); Member National Society of Professional Engineers (NSPE); Member ASTM

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Arizona Statewide Airport Pavement Management System (APMS) Update (Statewide, AZ)	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Oversaw all aspects of this project, which involved sixty-three airports and included collecting inventory and condition data, preparing maps, developing an 8-year maintenance and rehabilitation (M&R) plan, generating reports, developing an APMS procedures manual, and updating an Interactive Data Exchange Application (IDEA). This project also involved testing with a falling weight deflectometer (FWD) to determine allowable loads and Pavement Classification Numbers (PCNs). Also served as the Project Manager for the 1999 implementation and the 2002, 2006, and 2010 updates. \$1,264,944.		
2.	Phoenix Sky Harbor International APMS Update (Phoenix, AZ)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal-In-Charge for this Airfield and Testing project. Oversaw this project, which included reviewing records, updating maps, conducting Pavement Condition Index (PCI) inspections, updating and customizing the PAVER™ database, developing M&R recommendations, preparing a project report, and creating a geographic information system (GIS) link within PAVER™. In addition, it included calculating PCNs and developing an IDEA. \$260,394.		
3.	New Mexico Statewide APMS Update (Statewide, New Mexico)	2017 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Overseeing all aspects of this project which involves forty-eight airports and includes collecting inventory data, conducting PCI inspections, updating the PAVER™ database, analyzing data, calculating PCNs for the airport runways, developing a multi-year M&R plan, composing reports, developing a web-based IDEA, and conducting training on the use of the PAVER™ software. It also includes a performing a structural analysis of the runway pavements using a heavy-weight FWD and calculating runway PCNs. \$1,216,674.		
4.	Colorado Statewide APMS Update	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. This multi-year project involved pavement management at sixty-three airports. It included conducting PCI surveys, preparing maps, updating the PAVER™ database, performing data analysis, preparing M&R programs, creating a map link to PAVER™, updating the IDEA, and developing reports. During 2012, this project also included a specialized study on materials-related distress (MRD) in Colorado. Also served as the Project Manager for all previous updates dating back to 1996. \$678,038.		
5.	Tucson Airport Authority APMS Update (Tucson, AZ)	2013	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal-In-Charge for this Airfield and Testing Project. This project included records review, map updates, PCI inspections, PAVER™ update and customization, development of M&R recommendations, preparation of a project report, and creation of a GIS link within PAVER™. In addition, it included the determination of PCNs for the airside pavements and training on the use of PAVER™. \$156,983.		



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME	b. ROLE IN THIS CONTRACT	c. YEARS EXPERIENCE	
Kathryn A. Zimmerman, P.E.	Principal-In-Charge / Project Manager	1. TOTAL	2. WITH CURRENT FIRM
		31	20

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> <b>M.S., Civil Engineering, University of Illinois, 1985</b>	f. PROFESSIONAL TRAINING - REGISTRATIONS <small>Professional Engineer: AZ, AL, AR, CO, CT, FL, HI, ID, IL, IN, IA, KS, KY, LA, MD, MI, MS, MO, MT, NE, NV, NJ, NM, NY, NC, OH, OR, SC, SD, TN, TX, UT, WA, WV, WI, WY</small>
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author of ICMPA's "Pavement Management's Role in an Asset Management World," Co-Author of FHWA's "Practical Guide for Quality Management of Pavement Condition Data," Member TRB, Member ASCE, Recipient of the National Highway Institute (NHI) Instructor of Excellence Award, Recipient of TRB Blue Ribbon Award

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Nevada DOT Transportation Asset Management Plan (TAMP) Development (Statewide, NV)	2016 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Value Analysis and Highway project. Directing the development of a TAMP that includes pavements, bridges, and ancillary assets. Facilitating project meetings and technical work group activities to obtain the information needed to complete the TAMP. \$383,728.		
2.	Ohio DOT TAMP Development (Statewide, OH)	2015 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Value Analysis, Life Cycle Costing, and Highway project. Developing a TAMP for pavements, bridges, and culverts that leads to changes in the agency's existing processes to reduce life cycle costs and preserve system conditions under constrained funding projections. The development of the TAMP includes a life cycle assessment of current pavement and bridge management strategies, a risk management assessment, and facilitating meetings with Technical Work Groups. \$399,813.		
3.	Town of Cave Creek Pavement Management System Implementation (Cave Creek, AZ)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal-In-Charge for this Streets project. Oversaw all aspects of the project which included performing network definition, developing a database, conducting a condition inspection, and developing a multi-year M&R program. \$70,810.		
4.	FHWA Transportation Performance Management IDIQ (Nationwide)	2017 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manger for this Indefinite Delivery Indefinite Quantity (IDIQ) Transportation Research Project. Overseeing the day-to-day management of research task orders related to the establishment of performance-based transportation management at the Federal level. Task Orders include Technical Support, Support for the Bridge Condition Performance Measure, and Support for the Pavement Condition Performance Measure. \$620,176.		
5.	Transportation Asset Management (TAM) Gap Analysis Tool (Nationwide)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal Investigator for this Transportation Research Project. Analyzed the need for revisions to the Gap Analysis Tool included in the AASHTO Transportation Asset Management Guide – A Focus on Implementation and developed a spreadsheet tool that met those requirements. Developed a gap analysis tool that was user-friendly and applicable for transportation practitioners and decision makers in the United States. \$148,560.		



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Monty J. Wade, P.E.</b>	b. ROLE IN THIS CONTRACT Principal-In-Charge/Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL <b>22</b>	2. WITH CURRENT FIRM <b>18</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> <b>M.S., Civil Engineering, University of Illinois, 1993</b>	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer, AZ, FL, IL, IA, MI, MO, OH, TN; Canadian Provinces AB, MB, NL, NS, ON, SK
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author ICMPA's "The Use of GPS-Based Distress Mapping to Improve Pavement Management;" Member, ACC; Member, ASCE,

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<b>Arizona Statewide APMS Update (Statewide, AZ)</b>	<b>2015</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Senior Engineer for this Airfield and Testing project. Provided Quality Assurance/Quality Control (QA/QC) support for the FWD analysis and PCN calculation portions of the project. \$1,264,944.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	<b>Phoenix Sky Harbor International Airport Airside Pavement Assessment (Phoenix, AZ)</b>	<b>2014</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield and Testing project. Oversaw all aspects of the project, which included conducting PCI inspections, performing FWD testing, updating the PAVER™ database, performing a condition evaluation for airside service roads, developing M&amp;R recommendations, calculating PCNs, and assisting with developing a web-based IDEA. \$260,394.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	<b>Houston Airport System Asset Condition Assessments (Houston, TX)</b>	<b>2014</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield and Testing project. Oversaw all aspects of the project which included conducting PCI inspections and updating the APMS for the runways and taxiways, conducting FWD testing, analyzing data, converting the existing AIRPAV™ database to PAVER™, determining PCNs, and developing M&amp;R recommendations. Nearly 42 million square feet of pavement were inspected. Also provided training on the business process for maintaining the APMS and proper M&amp;R techniques. \$423,338.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	<b>Tucson Airport Authority APMS Update (Tucson, AZ)</b>	<b>2013</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield and Testing Project. Oversaw all aspects of the project, which included a records review, map updates, PCI inspections, PAVER™ database update and customization, determination of PCNs, development of M&amp;R recommendations, preparation of a project report, and training. \$156,983.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	<b>Phoenix Deer Valley Airport PCN Analysis (Phoenix, AZ)</b>	<b>2014</b>	<b>N/A</b>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <b>Project Manager for this Airfield Project. Performed a records review, calculated PCNs, performed a geotechnical investigation, and developed a pavement strength report. \$29,803.</b>	<input checked="" type="checkbox"/> Check if project performed with current firm	



**ATTACHMENT I – General Qualifications**

**ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:  
ADSP015-00004729**

**STATE PROCUREMENT OFFICE  
Department of Administration  
100 North 15<sup>th</sup> Avenue, Suite 201  
Phoenix, Arizona 85007**

**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Kyle M. Potvin, P.E.</b>	b. ROLE IN THIS CONTRACT Project Manager/Senior Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 21	2. WITH CURRENT FIRM 14

d. LOCATION *(City and State)* Applied Pavement Technology, Inc. (Waunakee, WI)

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S., Land Surveying, Michigan Technological University, 1997 A.S., Civil Engineering, Michigan Technological University, 1996	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer LA, MI, NV, ND, WI
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*

**Member, ASTM; Member, ASCE; Member, Experimental Aircraft Association**

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	<b>Arizona Statewide APMS Update (Statewide, AZ)</b>	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Senior Engineer for this Airfield and Testing project. Oversaw all fieldwork. Conducted PCI inspections, oversaw mapping, updated the inventory and network definition, developed and customized the database, and analyzed data. Assisted with developing an IDEA and project reports. Also served as a Project Engineer for the 2002, 2006, and 2010 updates. \$1,264,944.		
2.	<b>Michigan Statewide APMS Update (Statewide, MI)</b>	2016 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Managing day-to-day aspects of the project including conducting PCI inspections, developing and customizing the PAVER™ database, analyzing data, assisting with developing a web-based IDEA, and preparing reports. Also served as the Project Manager for the 2005 to 2008 update and 2009 to 2013 update. \$669,810.		
3.	<b>Wisconsin Statewide APMS Update (Statewide, WI)</b>	2016 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Airfield and Testing project. Managing the day-to-day aspects of the project, including updating and customizing the APMS database, conducting PCI inspections, calculating PCNs, analyzing the APMS, developing a 5-year CIP, and preparing project reports. Also served as the Project Manager for the 2012 update and the 2009 to 2011 update. \$1,253,268.		
4.	<b>Hawaii Statewide APMS Update (Statewide, HI)</b>	2016 (in progress)	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Lead Engineer for this Airfield and Testing project. Responsible for coordinating, planning, and conducting all fieldwork including PCI inspections and structural evaluation using an FWD. Also responsible for collecting historic construction records, updating the PAVER™ database, and preparing project reports. Also served as a Project Engineer for the 2005 update. \$1,417,508.		
5.	<b>Houston Airport System Asset Condition Assessments (Houston, TX)</b>	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Senior Engineer for this Airfield and Testing project. Converted existing APMS data from the previously used AIRPAV™ software to PAVER™. \$423,338.		



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Stephen B. Seeds, P.E.</b>	b. ROLE IN THIS CONTRACT Project Manager/Senior Engineer	c. YEARS EXPERIENCE	
		1. TOTAL <b>37</b>	2. WITH CURRENT FIRM <b>15</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Reno, NV)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S., Engineering, University of Texas at Austin, 1980	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer Nevada and California
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Member, TRB; Member, California Pavement Preservation Task Group; Member, International Association for Asphalt Pavements; Member, ASCE; Member, Community Associations Institute; Recipient of the NHI Instructor of Excellence Award

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Pavement M&R for Jefferson County Parking Lots (Jefferson County, CO)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Parking Lot and Testing project. Oversaw all aspects of the project which included conducting a visual inspection, reviewing data, performing PCI surveys, coordinating and analyzing coring and boring samples, developing a parking lot database, developing M&R recommendations, and preparing a report. Also developed materials and construction requirements and prepared a request for bids. \$41,200.		
2.	Pavement Engineering and Management Support for Arrow Creek Homeowners Association (Reno, NV)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Streets project. Overseeing all aspects of the project, which includes conducting pavement condition surveys, providing construction oversight, preparing bid packages, and developing annual M&R programs, as well as long-term pavement management plans used in developing the reserve study. Annual project since 2004. Served as Technical Advisor and Expert Witness in 2008 Pavement Forensics project. \$35,959 (most recent project).		
3.	Douglas County Forensic Pavement Analysis (Douglas County, CO)	2013	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Streets, Testing, and Forensic Engineering project. Oversaw all aspects of the project including a records review, pavement condition surveys, materials testing, and developing recommendations for pavement rehabilitation. Also served as Technical Advisor and Expert Witness in litigation over premature failure of pavement. \$84,607.		
4.	Pavement Engineering and Management Support for Lake Glenn Manor Homeowners Association (Carson City, NV)	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Streets project. Evaluated the existing pavement network and projected the type and timing of the next major rehabilitation treatment. Developed a long-term (30-year) M&R plan that can be used by the association's reserve specialist to develop the Homeowners Association's next reserve study. Prepared a request for bids, and provided quality assurance support during construction. Also served as the Project Manager for the 2011 project. \$6,610.		
5.	Arizona Department of Transportation Evaluation of Maintenance Strategies (Statewide, AZ)	2012	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager for this Transportation Research Study. Evaluated field performance data from wearing course and preventive maintenance experimental treatment projects to determine which provided the best performance in terms of weathering, flushing, skid resistance, thermal cracking, and fatigue cracking and to identify recommend those that were most effective. \$115,000.		



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**4. Resumes of Key Personnel Proposed for this Contract** *(Complete one Section 4 for each key person.)*

a. NAME <b>Mark P. Gardner, P.E.</b>	b. ROLE IN THIS CONTRACT Project Manager/Senior Engineer	c. YEARS EXPERIENCE	
		1. TOTAL <b>32</b>	2. WITH CURRENT FIRM <b>4</b>

d. LOCATION *(City and State)* **Applied Pavement Technology, Inc. (Urbana, IL)**

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S., Civil Engineering, Texas A&M University, 1982	f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer Texas
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*  
Co-Author, FHWA's "Procedures for Defining Management Strategies and Targets Associated with Transportation Goals," Member, TRB; Member, TRB Committee AFD60 Flexible Pavement Design; Member, ASCE; Recipient, NHI Instructor of Excellence Award

**H. RELEVANT PROJECTS**

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Town of Cave Creek Pavement Management System (Cave Creek, AZ)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets and Testing project. Oversaw all aspects of the project which included performing network definition, developing a PAVER™ database, conducting PCI inspections, and developing a multi-year M&R program. \$70,810.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	City of Goodyear Pavement Management System (Goodyear, AZ)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets and Testing project. Evaluated the pavement management system, recommended improvements in processes, evaluated City experience with selected treatments, and recommended greater use or specific preservation approaches. Supported the Public Works Director in presentation of findings to City Council, highlighting current conditions and budget needs to meet performance goals. \$61,514.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	City of Peoria Street Asset Inventory and Pavement Management System Update (Peoria, IL)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets and Testing project. Oversaw all aspects of the project which included creating an asset inventory for street signs and lights, completing automated surveys for 1,000 lane-miles of city streets and 100 miles of alleys, conducting PCI surveys, analyzing data, updating the PAVER™ database, improving the City GIS showing roadway assets, and supporting the Public Works Director in a presenting network conditions and budget scenarios to City Council for use in budget planning discussions. \$488,743.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	Line 6B Haul Road Evaluation (Michigan and Indiana)	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Streets, Highways, Testing, and Inspection project. Oversaw the evaluation of the impact of heavy equipment on approximately 2,700 miles of roadway through collection and analysis of pre- and post-construction condition data. \$468,450.	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	Review of Engineering Consultants International (PVT) LTD's Designs for Abu Dhabi Port Roads. (Abu Dhabi, United Arab Emirates)	2014	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager for this Design Reviw project. Provided a peer review and opinions for design plans for Abu Dhabi Port Roads. \$9,769.	<input checked="" type="checkbox"/> Check if project performed with current firm	



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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION (City and State)	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Arizona Statewide APMS Update (Statewide, AZ)	2015	N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
ADOT Aeronautics Group	\$1,310,318	\$1,264,944

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

In 2000, Applied Pavement Technology, Inc. (APTech) established the Arizona airport pavement management system (APMS) for the Arizona Department of Transportation (ADOT) Aeronautics Group to provide them with a tool to proactively manage the pavement infrastructure at fifty-three Arizona airports (the system now includes sixty-six airports).

The initial study, performed in 2000, indicated that state-funding levels were insufficient to sponsor all necessary pavement maintenance and rehabilitation (M&R) projects. Based on the results of the pavement management study conducted by APTech, the Aeronautics Group initiated the Airport Pavement Preservation Program (APPP). The APPP allows the state to make the best use of its limited budget by funding those work types that have historically proven to provide the most benefit per dollar expended. Because it is a state-level program, the Aeronautics Group can provide airports with funding for crack sealing, slurry seals, thin overlays, and concrete restoration. This is especially important for smaller facilities or those located in sparsely-populated areas, which could not otherwise afford extensive maintenance efforts.

Due to ADOT's satisfaction with APTech's work, the Aeronautics Group retained APTech to update its APMS again in 2003, 2006, 2010, and 2013. During these projects, APTech updated the systems inventory and maps, and conducted pavement inspections using the Pavement Condition Index (PCI) methodology. An 8-year plan for pavement projects, a statewide report, individual airport reports, an APMS procedures manual, and an executive summary were also produced. During the 2010 project, APTech developed an Interactive Data Exchange Application (IDEA) that is accessed via ADOT's web page. This has greatly facilitated the access and use of the pavement management information. To view the program, please visit:

<http://azdot.gov/planning/airportdevelopment/development-and-planning/airport-pavement-management-system>. In addition, APTech conducted a training course on the PCI procedure and the PAVER™ pavement management software.

During the 2013 update, the scope of work was expanded to include falling weight deflectometer (FWD) testing and coring. The collected data was used to determine the structural condition of the pavements and to calculate Pavement Classification Numbers (PCNs) for all pavements except T-hangers.

The APMS and the APPP have been highly successful, as evidenced by its receipt of the National Association of State Aviation Officials (NASAO) Most Innovative State Program Award and the Arizona State Quality Award. The Aeronautics Group is now able to proactively manage the pavement infrastructure at airports around the state with software that can help to identify pavement-related needs and develop prioritized lists of pavement-related projects. Individual airports have reported that it is much easier to plan ahead for pavement M&R using the results of the APMS.



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
Phoenix Sky Harbor International Airport Airfield Pavement Assessment (Phoenix, AZ)	2014	N/A

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
City of Phoenix Aviation Department	<b>\$260,394</b>	<b>\$260,394</b>

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

The Phoenix Sky Harbor International Airport has an extensive pavement network, which represents a major infrastructure investment to the City of Phoenix (City). In order to protect this investment, the City contracted with APTech to develop a pavement maintenance management program (PMMP) that will allow the pavements to be managed in a cost efficient manner.

To develop the PMMP, APTech conducted an airfield pavement assessment which included reviewing records, updating maps, conducting PCI inspections, customizing the PAVER™ database, and developing APMS reports. The data collected during the assessment were used to determine M&R needs and to develop the PMMP. APTech performed the PCI inspections on the runways and taxiways at night so as not to interfere with regular traffic at the airport.

In addition to the mainline pavements, APTech incorporated the shoulders, blast pads, and infield pavements into the APMS. APTech also performed a cursory visual evaluation and providing general M&R recommendations for the airside service roads.

APTech performed nondestructive testing (NDT) using its FWD on select airfield pavement, such as those identified during the PCI inspections as requiring further investigation. APTech also developed PCNs for the airside pavements in accordance with the requirements in Federal Aviation Administration (FAA) Advisory Circular 150/5335-5B, Standardized Method of Reporting Airport Pavement Strength – PCN and FAA's COMFAA software. The resulting PCNs were converted to allowable loads for each gear type (single, dual, dual tandem, and so on) using the FAA's supporting spreadsheet.

Finally, APTech developed an IDEA, which is an interactive web-formatted program used to disseminate the results and recommendations of the pavement management update without requiring knowledge of the use of PAVER™.



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
Town of Cave Creek Pavement Management System Implementation (Cave Creek, AZ)	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
	2014	N/A

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Town of Cave Creek, AZ	\$70,810	\$70,810

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

The Town of Cave Creek, Arizona includes approximately 80 centerline miles of paved roadway in its pavement network. The Town wished to protect its capital investment in the pavement network by promoting efficient and effective pavement maintenance and management. To meet this goal, the Town selected APTEch to implement a pavement management system.

APTEch determined that PAVER™, a structured pavement management system, would provide the best functionality at the most reasonable cost. To implement this system, APTEch performed a pavement network definition and condition assessment, developed a pavement database, calculated pavement deterioration estimates, developed an M&R plan, installed the PAVER™ software, and trained the Town staff in the use of the system.



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
<b>Design-Build RFP Preparation for US-36 (Devner, CO)</b>	<b>2013</b>	<b>N/A</b>

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
<b>Shannon &amp; Wilson, Inc.</b>	<b>\$12,754</b>	<b>\$9,900</b>

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

As a subconsultant for Shannon & Wilson, Inc., APTEch provided pavement and material expertise for the design team's (comprised of Shannon & Wilson, Atkins, Kiewit, and Isolux as the concessionaire) proposal for this Colorado Department of Transportation (CDOT) and Colorado High Performance Transportation Enterprise Public-Private Partnership Design-Build Project for US Route 36.

APTEch was responsible for the evaluation and design of alternative pavement sections using the American Association of State Highway and Transportation Officials (AASHTO) Guide for Design of Pavement Structures (1993) and the AASHTO Mechanistic-Empirical Pavement Design Guide—Manual of Practice (2008). APTEch was also responsible for developing and reviewing applicable portions of the project proposal, as well as responding to design team and CDOT requests.



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**5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT**

*(Present no more than five (5) projects. Complete one Section 5 for each project.)*

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
Douglas County Pavement Forensic Analysis (Douglas County, CO)	2014	N/A

**23. PROJECT OWNER'S INFORMATION**

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Douglas County Department of Public Works	<b>\$150,249</b>	<b>\$84,607</b>

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

In 2006, the Douglas County Department of Public Works selected a contractor to construct two new street segments on Chambers Road and West Mainstreet in Parker, Colorado. In 2008, personnel from both Douglas County and the Town of Parker observed significant stripping and rapid deterioration occurring in the top hot-mix asphalt (HMA) layer. After more sampling, testing, and negotiations, the County and Contractor reached an agreement to remove and replace certain portions of both Chambers Road and Mainstreet under the original performance bond and to extend the performance bond through May 1, 2012. In April 2012, before the end of the extended warranty, Douglas County completed another pavement evaluation, which noted the presence of stripping, cracking, raveling, and segregation. In October 2012, Douglas County contracted with APTEch to inspect the streets, identify the cause(s) of the observed distresses, and make appropriate recommendations for the rehabilitation of both streets.

APTEch conducted a records review, PCI survey, materials sampling, and lab testing to evaluate pavement conditions on Chambers Road, Mainstreet, and Hilltop Road (for comparison purposes). APTEch used the collected data to develop recommendations for repairs in accordance with the terms of the County's agreement with their contractor. In addition, APTEch provided expert witness support to Douglas County and its attorneys.



ATTACHMENT I – General Qualifications

ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:  
ADSP016-00005912

STATE PROCUREMENT OFFICE  
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6. ADDITIONAL INFORMATION

a. PROVIDE ANY ADDITIONAL INFORMATION YOU FEEL MAY BE NECESSARY TO DESCRIBE YOUR FIRMS QUALIFICATIONS. (ATTACH ADDITIONAL SHEETS AS NEEDED.)

Applied Pavement Technology, Inc. (APTech) owns and operates testing equipment used as part of its pavement evaluation and construction inspection services. APTech owns a Dynatest 8081 heavyweight model falling weight deflectometer (FWD), which is a specialized pavement testing device that facilitates the rapid, accurate, and nondestructive characterization of the structural condition of all types of pavements. The FWD is used in both the routine and specialized testing of airfield and highway pavements. This state-of-the-art device is capable of applying loadings to a pavement that are similar in magnitude and duration to those produced by moving wheel loads, including those of even the heaviest aircraft. It is able to apply loads up to 55,000 pounds. FWD testing allows for the evaluation of multiple locations in a short period of time without disturbing the pavement structure.

APTech also owns and operates a trailer-mounted material sampling device that can be used to obtain core and auger samples of the pavement and subsurface layers. The coring apparatus is applicable for both hot-mix asphalt (HMA) and portland cement concrete (PCC) surfaced pavements. Using diamond-tipped core barrels of various sizes, the device can obtain core samples up to 24-inches long and with diameters ranging from 3 to 12-inches. The mast of the apparatus is omni-directional, meaning it can be used to obtain cores from walls and low-lying ceilings in addition to pavements. Samples obtained by the device can be tested in a number of ways to determine layer thickness, unit weight, strength, stiffness, and other intrinsic material properties. The auger apparatus provides a means of obtaining samples of all unbound layer materials that exist below the pavement surface, up to a depth of 10-feet. Tests can then be performed on the extracted samples to determine moisture content, gradation, densities, California Bearing Ratios (CBRs), and overall material classification.

APTech owns a dynamic cone penetrometer (DCP), which is a simple device used to obtain in situ subgrade strength measurements in conjunction with a coring program. APTech also owns a pachometer, which is used to detect the presence of ferromagnetic materials, such as steel and iron, embedded in concrete. Its primary function is to determine the thickness of the concrete cover over a steel reinforcement. Additionally, APTech owns a digital faultmeter, air meter, slump cones, beam and cylinder moldings, handheld computers for data collection, and GPS cameras.

APTech also owns a portable seismic pavement analyzer (PSPA). The PSPA is a nondestructive testing (NDT) device that measures the seismic modulus of concrete pavements. It also identifies transitions between asphalt lifts and changes in modulus depth. Using the PSPA, APTech is able to estimate thickness via the impact echo method.

7. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

a.	Percentage of Total Work Attributable to State, Federal and Municipal Government Work:	68.1%
b.	Percentage of Total Work Attributable to Non-Government Work:	31.9%

8. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts.

Signature:  Date: 12/14/2015

Name: Kathryn A. Zimmerman Title: President